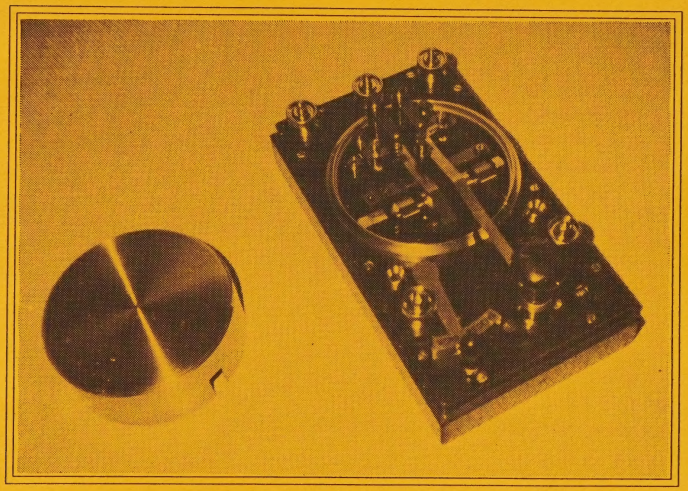
Number 25 – Autumn 1992

# Morsum Magnificat



*The Morse Magazine*

# Morsum Magnificat

*the Morse Magazine*

*MORSUM MAGNIFICAT was first published in Holland, in 1983, by the late Rinus Hellemons PA0BFN. Now published in Britain, it aims to provide international coverage of all aspects of Morse telegraphy, past present and future. MORSUM MAGNIFICAT is for all Morse enthusiasts, amateur or professional, active or retired. It brings together material which would otherwise be lost to posterity, providing an invaluable source of interest, reference and record relating to the traditions and practice of Morse.*

---

**ANNUAL SUBSCRIPTIONS:** (Four Issues, 1992–1993):

| | |
|---|---|
| United Kingdom: | £8.50 per annum, post-paid |
| Europe, including Eire: | £9.00 sterling |
| Other countries: | Surface mail – £9.00 sterling (or US $17.00 **Bills only**) |
| | Airmail – £11.00 sterling (or US $21.00 **Bills only**) |

Payment by Access, Eurocard, Master-card or Visa is also accepted; quote your card number and expiry date. Please note that, owing to very high bank charges for currency exchange, we are unable to accept overseas cheques, drafts, money orders, etc., unless payable in sterling. Overseas cheques and drafts must be drawn on a London clearing bank. **Make all cheques payable to 'G C Arnold Partners'.**

**EDITORIAL AND SUBSCRIPTION OFFICES:**
Morsum Magnificat, 9 Wetherby Close, Broadstone, Dorset BH18 8JB, England.
Telephone: Broadstone (0202) 658474; International +44 202 658474

**EDITOR** Geoff Arnold G3GSR

**CONSULTANT EDITOR** Tony Smith G4FAI, 1 Tash Place, London N11 1PA, England. Tel: 081-368 4588

© G C Arnold Partners 1992 ISSN 0953–6426
Printed by Hertfordshire Display Company, Ware, Herts.

---

**ON OUR FRONT COVER**

GPO double current key with brass cover, No. 3265, 1917. ATM Co. Ltd. Beautifully restored by G3BEX. *(Collection/Photo: Jon Hanson G0FJT)*

# Comment

IF I HADN'T RECEIVED my initiation into Morse communications at marine wireless college beginning at the tender age of 15½ years, I would probably have missed out on the pleasure that the mode has brought me since. Although for a variety of reasons, I have not been active on the amateur bands for several years now (something I hope to remedy soon), I still derive much enjoyment from listening to Morse signals. It's over thirty years since I 'swallowed the anchor' and gave up professional operating, but I've maintained contact with the mode, and my brain still 'reads' Morse signals without conscious effort on my part.

I feel sad when I hear some aspiring radio amateurs declare that their only reason for learning the Code is so that will have access to the HF bands to use SSB or data modes; that they will never touch a key again once they've passed the test. I always hope that they may discover along the way what an enjoyable and useful mode Morse is – there is no-one more enthusiastic than a convert, after all!

On the other hand, I take great heart when I hear of moves towards spreading the message in a more effective way. Two items in this issue of *MM* fall into this category. One is the announcement of details of the new 'QSO format' 12 wpm UK Morse test, which could well encourage newly-qualified 'Class A's' to at least give Morse a try before hanging up their key. The other is the review of the latest edition of the RSGB's *Morse Code for Radio Amateurs*, which quotes author George Benbow's declaration that the aim of the book '… is to interest people in the Morse code as a new and different language with which one can communicate world-wide, and not to regard it as an annoying obstacle in the acquisition of a Class A licence.'

Amen to that, I say!

Geoff Arnold

*G3GSR*

# Contents


2 News
8 The Space-Matic 21B Keyer
12 The Telegraph in Tasmania
16 Club Profile – 6: BTC
17 Readers' ADs
18 The CMOS Super Keyer II
23 Christmas Competition
24 Showcase
26 Book Review
*Morse Code for Radio Amateurs*
27 Origination of the Bencher Paddle
32 American Telegraph Instrument Makers – 3
34 Binders for *MM*
35 A Musical Telegraph Memento
36 More on Aeroflot
37 MM Back Issues & in the Next Issue
37 *Radio Bygones*
38 Your Letters
45 Bookshelf
46 Index to Issues 21 – 24
48 Cartoon – I'll use CW next time!


# Advertisement Index


11 G4ZPY Keys
26 G-QRP Club
37 FISTS CW Club

# News

## HST Competition, Baunatal, 1992

THE 1992 GERMAN high speed telegraphy competition organised by the High Speed Club (HSC) and the Deutscher Amateur Radio Club (DARC), was held at Baunatal on Saturday, April 18.

First place results were as follows. To obtain the speed, divide the tempo by 5.

| Name | Call | Tempo/ Faults |
|---|---|---|
| *Reading, Groups* | | |
| Thomas, Frank | DL2HTF | 210/0 |
| *Reading, Figures* | | |
| Spurling, Gunther | Y28ZL | 260/2 |
| *Transmitting, Groups* | | |
| Neibig, Uwe | DL4AAE | 146/1.0 |
| *Transmitting, Figures* | | |
| Neibig, Uwe | DL4AAE | 112/1.0 |
| *Transmitting, Mixed Text* | | |
| Neibig, Uwe | DL4AAE | 133/0.8 |
| *Reading, Mixed Text* | | |
| Neibig, Uwe | DL4AAE | 150/3 |
| *Reading, By Ear* | | |
| Neibig, Uwe | DL4AAE | 175 |

*Information from the EUCW Bulletin*

## EUCW Fraternising CW QSO Party 1992

The EUROPEAN CW ASSOCIATION'S 12th CW Fraternising Party will be held on 21–22 November 1992 as follows (all times UTC):

**21 November**

| | |
|---|---|
| 1500–1700 | 7.010–7.030MHz |
| | 14.020–14.050MHz |
| 1800–2000 | 7.010–7.030MHz |
| | 3.520–3.550MHz |

**22 November**

| | |
|---|---|
| 0700–0900 | 7.010–7.030MHz |
| | 3.520–3.550MHz |
| 1000–1200 | 7.010–7.030MHz |
| | 14.020–14.050MHz |

All amateur and SWL stations in Europe are invited to enter in one of the following four classes: A – Members of EUCW clubs using more than 10W input or 5W output; B – Members of EUCW clubs using QRP (less than 10W input or 5W output); C – Non-members of EUCW clubs using any power; D – Short-wave listeners.

**Exchanges:** Class A & B, RST/QTH/Name/Club/Membership number. Class C, RST/QTH/Name/NM (i.e., not a member). Class D, Log information from both stations.

**Call:** CQ EUCW TEST. Stations may be worked or logged only once a day during the contest.

**Scoring:** Class A/B/C – 1 point per QSO with own country, 3 points per QSO with other EU country. Class D – 3 points for every complete logged QSO. Multiplier, all classes: 1 multiplier point for each EUCW club worked/logged per day and band.

EUCW clubs are AGCW-DL; BQRP; BTC; EHSC; FISTS; FOC; G-QRP; HACWG; HCC; HSC; INORC; OK-QRP; SCAG; SHSC; UCWC; UFT; U-QRQ-C; VHSC, and members of these clubs are especially asked to support this event.

**Logs:** to include date, UTC, band, call, info sent, info received, and points claimed

per QSO. Summary to include full name, call, address, total points claimed, station details, power used, and signature. To be received by the EUCW Contest Manager, Guenther Nierbauer DJ2XP, Illingerstrasse 74, D6682 Ottweiler, Germany, not later than 31 December 1992.

Certificates will be awarded to the three highest scorers in each class.

### TOPS Activity CW Contest 1992

THIS YEAR'S TOPS CONTEST will be held from 1800 UTC December 5 to 1800 UTC December 5, on frequencies 3.500–3.560MHz with 3.500–3.512 reserved for DX contacts.

It is open to all amateurs, whether TOPS members or not, in three classes: A, single operator; B, multi-operator; and QRP, single operator, up to 5 watts output. Certificates of merit will be awarded to the highest scorers.

This contest continues to be popular both in Europe and further afield. There have, however, been few entries from the UK in recent years, and more will be welcomed,

Further information about the contest is available from Chris Hammett G3AWR, 48 Hadrian Road, Newcastle upon Tyne NE4 9HQ, England.

### Changes to UK Amateur Morse Test

BRITAIN'S RADIO LICENSING AUTHORITY, the Radiocommunications Agency, has announced changes to the format of the 12 wpm Amateur Morse test. Following the success of the 5 wpm Novice test (described in MM21, page 28), it has been decided that the 12 wpm test should also be in a QSO format. This is considered to be better at preparing candidates for the sort of operating conditions they can expect to encounter 'on-the-air'.

The new style test will be available from 1 January 1993, but candidates who have studied under the old format will be able to take the old-style test until 31 March 1993, when the new test will become compulsory.

As from 1 January 1993 a new procedure for the identification of candidates will also be introduced. Instead of written proof of identity, candidates will be required to bring to the test centre two recent passport-size photographs of themselves.

In the new test, candidates will receive a minimum of 120 letters and 7 figures in the form of a typical exchange between radio amateurs. A manual Morse key will be used to send the message, which will last approximately 2 minutes and 30 seconds. A maximum of six uncorrected errors will be permitted.

In the sending test, the candidate will send a given text, on a hand key, comprising not less than 75 letters and 5 figures, also in the form of a typical amateur exchange. This will last approximately 1 minute and 30 seconds There must be no uncorrected errors in sending and no more than 4 corrected errors will be allowed.

The test can include any of the following abbreviations, Q-codes or procedural characters: AGN, ANT, BK, CPI, CPY, CQ, CUL, CW, DE, DR, EL, ES, FB, FER, GA, GD, GE, GM, HPE, HR, HVE, HW, K, MNI, MSG, NW, OC, OM, OP, PSE, PWR, R, RPRT, RST, RX, SIG, SRI, TEMP, TKS, TNX, TU, TX, TXR, UR, VERT, VY, WID, WX, XYL, YL, 73, 88.
QRA, QRG, QRK, QRL, QRM, QRN,

QRO, QRP, QRQ, QRS, QRT, QRV, QRX, QRZ, QSA, QSB, QSL, QSO, QSY, QTH.

$\overline{AR}$, $\overline{CT}$, $\overline{BT}$, $\overline{KN}$, $\overline{VA}$, ?, /, Erase.

Both the 5 wpm and 12 wpm Morse tests are conducted by the Radio Society of Great Britain on behalf of the Radiocommunications Agency. All enquiries about Morse tests should be made to the RSGB, Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE.

### Morse Tests in NZ

NZART, the national radio society of New Zealand has successfully conducted Amateur Radio examinations on behalf of the Ministry of Commerce/New Zealand Radio Frequency Service for some years and is shortly to take over the conduct of Amateur Morse tests.

It has advertised for a Co-ordinator of Morse Code Examinations (Morse Examiner) to set up and maintain a suitable system of examinations with the objective of providing superior examination facilities to those currently provided by 16 NZRFS test centres.

Among the goals of the new service will be the holding of tests at weekends as well as weekdays to avoid candidates having to take time off work for the test, with tests held at suitable locations arranged by NZART branches; special arrangements for handicapped people or those in remote locations; and an investigation into the possibility of using computer-based Morse testing as an alternative to tape-based systems.

A number of Morse Test Officers, responsible to the Morse Examiner, will be selected by each NZART branch to conduct the 6 wpm Novice and 12 wpm full Morse tests. It is estimated that about 200 tests will be taken each year, including upgrade and previously unsuccessful candidates.

*Information from* Break-In, *journal of NZART*

### NZ Morse Competitions

COMPUTER-CONTROLLED sending and receiving competitions were held at the Christchurch Amateur Radio Expo earlier this year, conceived, organised and conducted by Guthrie Downer ZL3CS.

The results were computed taking into account both sending and receiving performance over two minutes, and incorporating weighted penalties for character and spacing errors. Spacing deficiencies in sending, which are difficult to avoid and contribute little to the difficulty of reading the Morse, were weighted only a fifth as much as character errors which corrupt the received text.

The algorithm used, developed by ZL3CS, when used with specialised software (written by Gary Bold ZL1AN), is claimed to give completely unambiguous results, avoiding human subjectivity completely. The winners were as follows: Open section, 1. Alan ZL3KR, 40.8 points; 2. Dave ZL4SV, 39.18 points. Intermediate section, John ZL3WG, 26.44 points. Junior section, Toby ZL3ATK, 26.46 points.

A report on this event by ZL3CS, circulated in *Data News*, includes the following:

'Although the results show that there were only some 20 competitors processed, there were at least 70 completed individual attempts to send Morse to the computer. There were many 'test' runs as well, usually to gauge the computer's acceptance

of the sender's fist. No record of these tests was retained, but they did show that some returned for repeat tries seven times! Some 50 texts were sent during copying runs.

'When shown the computer screen copy of their first sending attempts, most senders were appalled to see the number of dollar signs intermingled with their text. These appear on undecodable symbols usually when two letters are run together. A common error is the running together of the 'O' and 'F ' in 'OF '. Conversely, when spaces between letters become too long, spaces appear in the middle of words.

'What was most pleasing to observe, was the extra effort applied to the sending after the reasons for the faults shown were explained. In every case marked improvement followed. Several runs enabled some of the competitors to adjust well to the strict, non-compromising receiving software algorithm.

'Another observation was that the initial nervousness reduced markedly after one or two test runs. It is an unnerving experience, to be suddenly thrust into a position where individual skills are being displayed publicly.

'Receiving computer Morse is easy. But transcribing to paper is not so simple when you have copied all your Morse QSOs in your head for so many years. When asked how fast they would like to commence receiving, most competitors estimated their top speed accurately, and found that adapting to computer sent Morse was not too difficult.

'But sending correctly to a computer at high speed is very difficult, as many found out. However, it can be accomplished.

'Certificates of Morse proficiency were awarded to all participants whose performance met the correctness criteria as set out in the rules. All those who received prizes also received certificates.'

*The above information was extracted from 'The Morseman' column by Gary Bold ZL1AN, in* Break-In, *journal of NZART*

### GM0RSE Allocated to MEGS

AFTER A LONG WAIT, the callsign GM0RSE has now been allocated to the Morse Enthusiasts Group Scotland (MEGS). The group is a 'club of the air' which aims to foster and encourage the use of Morse at all levels of achievement.

Look out for this unique call when it is used with MEGS' weekly skeds around 3.530MHz on Monday and Thursday evenings at 7.30 p.m. local time.

Enquiries about the group should be addressed to the Chairman, George Allan GM4HYF, 22 Tynwald Avenue, Rutherglen, Glasgow G73 4RN, or to the Secretary, Stewart Spence GM3YCG, 90 Simshill Road, Glasgow G44 5EN.

### Morsecodians at Longreach

AN END OF AN ERA REUNION at the Stockman's Hall of Fame, Longreach, Queensland on June 27–28 marked the changeover from the last manual telephone service in Australia to automatic working.

During this event early Morse telegraph equipment was loaned by the Post and Telecommunications Historical Society of Queensland and operated by Keith Drury, an ex-telegrapher with Queensland Railways, and Ray Langtip, an ex-PMG telegraphist, working Telecom-provided 'landline' circuits to Brisbane and Canberra.

About 580 messages were transmitted from visitors at Longreach for postal despatch from the stations at Brisbane and Canberra and donations received for these messages raised around $A1000 for the Royal Flying Doctor Service.

*Report from John Houlder, Charnwood, ACT, Australia*

### Free Morse Program

GARY BOLD ZL1AN is a physicist at the University of Auckland and has been an amateur since 1960. CW has always been his main mode of operation and Morse is second nature to him. Since 1987 he has written the 'Morseman' column in *Break-In*, journal of NZART, and he makes available to readers his own Morse learning programs as follows:

TEACH is a 'start from scratch' code teacher which teaches all Morse characters from their sound.

RNDM generates random code groups at any speed, at any audio frequency, from any subset of characters, printing each code group on the screen after it has been sent.

FSEND sends any ASCII file as Morse.

KBD is a Morse keyboard simulator with anything typed on the keyboard sent as audio Morse.

RWD is a random word sender. It reads any ASCII file, pulls out individual words and sends them in random order. This provides practice in reading 'real words' without the possibility of anticipating what follows.

MREAD reads Morse after connecting a key between pins 5 and 6 of the RS-232 port. It decodes what is sent and prints it on the screen. It can be of great assistance in learning to send readable Morse or improving existing performance.

TRI is a triambic keyer, not part of the learning package but fun to play with.

All sent codes in these programs use Farnsworth spacing up to 14 wpm but any other Farnsworth speed can be set while programs are running if this is desired.

All programs are written in BASIC and require GWBASIC, QBASIC or a compatible interpreter to run them. A long README ASCII text file explains everything. Some of the advice given is based on the New Zealand plain language amateur Morse test but learners aiming for the new UK QSO based test can still master the code using the teaching techniques of these programs and can generate suitable material in preparation for their own test via some of the other programs.

This software is FREEWARE offered without charge by Gary Bold ZL1AN, via *Morsum Magnificat*. It may be copied and passed on, unmodified, to anyone who needs it. Its purpose is to promote amateur CW operation by teaching Morse to beginners and encouraging them to use it on the air. It can also help existing operators improve their present performance.

By arrangement with Gary Bold, these programs can be obtained in the UK by *MM* readers free of charge by sending a formatted 3.5in disk (IBM format), together with a stamped addressed envelope for its return, to Tony Smith, 1 Tash Place,

*Items of news for inclusion in this feature should be sent to Tony Smith, 1 Tash Place, London N11 1PA*

London N11 1PA. Please allow at least 3 weeks for its return in case there is a rush in response to this offer! This service is initially available only to *MM* subscribers but it is hoped to make it available to others at a later date. Users' comments will be welcomed.

### The Vail Correspondent

EDITED BY TOM FRENCH W1IMQ, a new quarterly journal, *The Vail Correspondent*, has just been launched.

The first issue, October 1992, contains a close look at the 'Junior' model Mac Key of 1936, as well as news items, hints, and ads, all of interest to key collectors.

Full details of the new publication are available from The Vail Correspondent, Box 88, Maynard, MA 01754, USA.

### News from Duxford

THE DUXFORD RADIO SOCIETY'S radio station GB2IWM has operated every Sunday, on Flying Days, and on some weekdays, during the main visitors' season this year at the Imperial War Museum's Duxford Airfield, using both SSB and CW.

Operation is from the Radiocommunications Room where many visitors from home and abroad have been welcomed. One aspect of the Society's activities is the encouragement of visitors to become interested in amateur radio and a free information sheet is available setting out the Morse code together with the phonetic alphabet. One enthusiastic visitor, aged six, returned after a week having learned the alphabet!

The Society welcomes members interested in the history of all aspects of armed forces (including clandestine) radio, whether in an active or corresponding capacity. To further its work, it particularly welcomes archivists, collectors, curators, photographers, researchers, restorers, translators, writers and radio operators, CW or otherwise.

Further information about the Society is available from The Secretary DRS, 95 Northolt Avenue, Bishop's Stortford, Herts CM23 5DS, England.

*Information from* Duxford Radio Newsletter, *Summer/Autumn 1992*

### Icelandic Novices

NOVICES IN ICELAND can be heard on CW only, crystal controlled, with up to 5 watts input, on 3.500–3.600, 7.000–7.040 and 21.000–21.150MHz, plus 3.633MHz (the country's main chat frequency). Look for three-letter TF calls with the third letter N, eg, TF3GBN, especially around 3.560MHz.

The Novice test is administered by the Icelandic Amateur Radio Union (IRA). The minimum age for a Novice licence is 14, and the licence must be upgraded within two years or it expires.

Morse teaching is by the sound-alike method (e.g., Cheeky-Charlie, Queer-Khaki-Cow, as per MM8, p.10). The teacher tells a short story which ends with the sound and rhythm of the letter being taught. The student then draws a picture based on the story and does other exercises to engrave the letter sound in the mind, eventually going on to speed exercises. After six evenings of study he is deemed ready for an on-the-air course using his Novice call. These courses are held on demand, mainly by TF3KB.

*Information from Reynir H. Stefansson, Reydarfirdi, Iceland*

# The Space-Matic 21B Keyer

*by Ken Randall GD3RFH*

I WAS VERY INTERESTED in the article by ZL1AN about the Accukeyer ('Keyers with Automatic Spacing', MM15, p. 12). I had never heard of it, but I do have an American commercially made electronic keyer with automatic character and word spacing, the Space-Matic 21B, made by Data Engineering Inc., which I bought in 1972. A few years after I bought it I heard that they had been taken over by another company so if the keyer is still made today it will be under a different name.

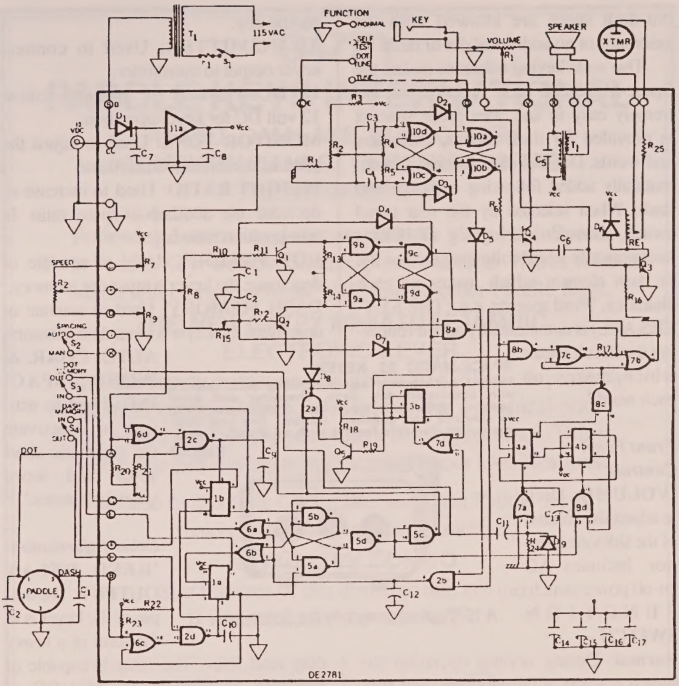
When I got the keyer by mail order from the USA it had a 115 volt mains transformer which I had to substitute with a 230V transformer. I also had a solid-state paddle, the Electronic Feather Touch Key, from the same firm, so that the only mechanical component in the chain from fingers to keying the transmitter was a reed relay.

I later changed as many of the TTL chips as I could for equivalent CMOS types as I found the mains transformer got rather hot after an extended period of operating. Using CMOS ICs resulted in the transformer running barely warm and did not affect the operation of the keyer at all.

I found the keyer very difficult to use at first and discovered that I had to ban the use of any other keyer or key while I tried to master it. The character spacing is easy enough to get used to, but the word spacing is something else! I found, and still do, that it requires a lot more concentration to operate this keyer properly than it does with an ordinary keyer.

I agree with ZL1AN, however, that once you have got used to it and can keep the paddle slightly ahead of the keyer the end result is just like machine Morse, i.e., perfect in every respect. Having got used to the automatic insertion of spaces between characters and words, the only thing that occasionally goes wrong is if I linger too long between characters. A word space is then inserted and nothing can be done about it while the keyer sends the space; the paddle is locked out!

At one point I built a Curtis keyer using the 8044AM chip and PCB, which was very good, the meter being more of a gimmick than anything else. But going back to an 'ordinary' keyer, after using the Space-Matic 21B, I found I was running everything together. I had become reliant on the keyer inserting spaces for me without realising it!




*Circuit of the Space-Matic 21B*

***Maker's Description***

The Space-Matic 21B instruction leaflet describes the keyer as follows:

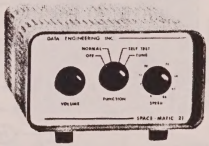
'The SPACE-MATIC 21B is an advanced keyer which allows the user to choose between a keyer with no dot or dash memory, with a dot memory, with a dash memory, or with both dot and dash memories, each selection is provided with manual or automatic character and word spacing. These selections are controlled by three rear panel switches.

The keyer can function with a single paddle or dual paddle key. A dual paddle allows the keyer to function in the iambic mode, providing alternative dots and dashes when both paddles are squeezed. Advanced dot and dash memories, when selected by rear panel switch, automatically insert a dot in a series of dashes or a dash in a series of dots. The memories insure against missed dots or dashes caused by momentary input key closures. Key closures extending to the end of the

dot-dash space are allowed with the assurance of no additional dot or dash.

This wide keying tolerance makes the Space-Matic 21B more accurate and extremely easy to use. Jam-proof spacing is provided for dots, dashes, characters and words. Dot and dash spacing is automatically added following each dot and dash. When selected by the rear panel switch, character spacing, e.g. (T H E) is automatically added following the last dot or dash element which makes up each character. Word spacing, e.g. (THE KEYERS ARE) is automatically added following the last character which makes up each word.'

**SPACE-MATIC 21 KEYER**
**Instant self-starting, self-completing dots, dashes, and associated dot, dash, character and word spacing. Adjustable weighting. 3.5-85 wpm. Built-in sidetone and speaker. Iambic. Dot and dash memories. Suitable for use with all standard keys.**
**$89.50**



*A 1972 advertisement for the Space-matic 21*

*Front Panel Controls*

'**VOLUME**: Used to adjust the volume of the sidetone monitor. Includes AC on-off power switch.

**FUNCTION SWITCH** – **Normal**: During normal operation the switch remains at this position. **Self test**: This position allows 100% operation of the keyer without keying the attached transmitter. **Dot-tune**: Used for transmitter tuning where a string of dots is recommended, such as for SSB transmitters. **Tune**: Used for tuning where a steady tune is permissible.

**SPEED**: Variable from 5 to 65 wpm.

*Rear Panel Controls*

**KEY**: Provision for manual keying with a straight key.

**PADDLE**: Connection for a single or twin paddle key.

**TRANSMITTER**: Used to connect keyer output to transmitter.

**12VDC**: Provided for applying remote 12 volt DC for keyer operation.

**MONITOR TONE**: Used to adjust the pitch of the monitor's oscillator.

**WEIGHT RATIO**: Used to increase or decrease the dot/dash-to-space ratio. In mid-position ratio is 1:1.

**DOT MEMORY**: Used to activate or deactivate the keyer's input dot memory.

**DASH MEMORY**: Used to activate or deactivate the keyer's input dash memory.

**AUTO. CHAR. & WORD SPACING**: Used to activate or deactivate the automatic character and word spacing features.'

*Other Information*

'**REED RELAY OUTPUT**: The output of the keyer is in the form of a heavy duty reed relay. The relay is capable of handling plus or minus 250VDC or peak VAC at 1000mA, or 20 watts, whichever is greater.

**FACTORY ADJUSTMENTS**: There are three adjustments in the keyer assembly. These adjustments have been engineered with small variable resistors to provide the user ease in performing adjustments if required. These adjustments are (1) weight ratio, (2) maximum speed, (3) minimum speed.'

**The Feather Touch Key will be described in a future article in *MM***

# G4ZPY
# PADDLE KEYS INTERNATIONAL

41 MILL DAM LANE, BURSCOUGH,
ORMSKIRK, LANCS., ENGLAND L40 7TG
TEL. (0704) 894299

Following International success with our Very High Speed Twin Paddle Key, we now proudly present another World Winner which will complement the VHS and all other Paddle Keys.

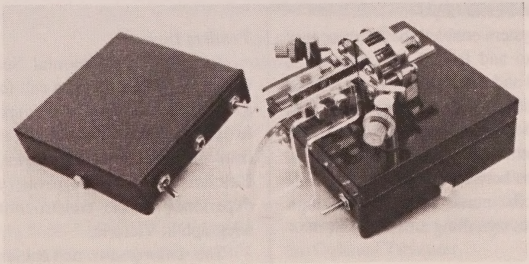
**THE *NEW* G4ZPY MINIATURE IAMBIC ELECTRONIC KEYER**

This little beauty, measuring only 80 x 80 x 20mm, is probably the most versatile Iambic available; and at a practical price. No; we are not using anyone else's Micro-processor. This is a new one that has been programmed to our specifications.

We also fit this little Gem under our Twin Paddle Keys, making them into the very attractive

***NEW* G4ZPY COMBO**

Star features of this dynamic duo are too numerous to mention here



*For information on all our Products, just send a 9" x 4" S.A.S.E. (GB), or 2 IRCs Overseas*

# The Telegraph in Tasmania

## Origins and Development

*by E.F. Jones G3EUE*

AS EARLY AS 1811 a signal station, based on naval practice, was established in Tasmania and by 1818 there were newspaper reports about land clearance in the Tamar Valley (the approach route from the Tasman Sea in the north to the port of Launceston) to facilitate the establishment of a line of signal stations in that area.

In fact, many years passed before a Semaphore signalling system was constructed there. Improvements had to be made to navigation on the river and a lighthouse and pilots' cottages built. By 1835 the system had been completed and a newspaper notice stated that messages could be sent and received 'from Windmill Hill (Launceston) to George Town, by the mouth of the river, in very few minutes on a clear day'.

This system enabled the movement of shipping to and from Launceston to be monitored and the 30 miles were covered by five stations with the base at the Post Office and the look-out at George Town, close to the mouth of the river. The greatest distance between the relay posts was 15 miles; the masts being 60 feet high with 16 foot signalling arms.

### *Ex-convict Operators*

Each station was manned by a ship's officer whilst the operators were ex-convicts on ticket-of-leave living on full naval rations. In 1852 the system was expanded by establishing a further station at Low Head which was right at the mouth of the river. For some reason, messages to and from Launceston Post Office passing over the first link were transmitted by signal flag.

The Semaphore system operated for 23 years, when it was superseded by the electric telegraph only four years after the first telegraph service was established on the mainland. The earlier system had its disadvantages, being particularly affected by winter fog, summer haze and mechanical breakdown. Nevertheless, business people opposed the change, regarding the proposal as a 'backward step', no doubt due to the fact that the visual system was convenient to monitor and easily read.

### *Tenders Invited*

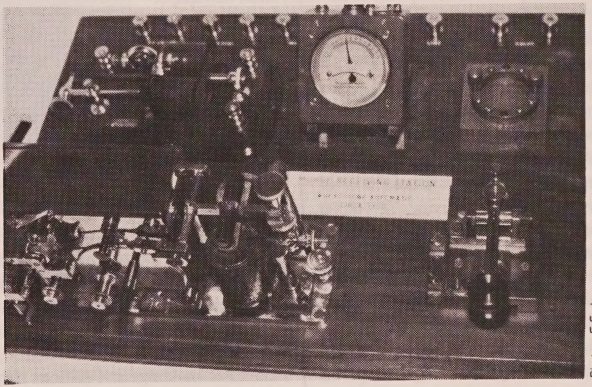
In 1856, the Colonial Secretary's Office in Hobart issued a call for tenders to construct telegraph lines from the north to Hobart and they accepted one from a firm of Canadian contractors, Messrs Butcher, Estage & Carroll, who had experience in the construction of the telegraph in Victoria.

The senior partner and engineer, W.H. Butcher, was appointed by the Tasmanian government as the Superintendent of Telegraphs in Hobart. His brother became the operator in Launceston. The cost of

the construction and equipment was: George Town to Launceston, £62. 10s. 0d. a mile; Hobart to Mount Lewis, £57. 0s. 0d. a mile; Launceston to Hobart, £52. 0s. 0d. a mile. Twelve sets of Morse recording apparatus cost £45. 0s. 0d. a set and additionally 400lb of register paper and 150lb of Groves cells (batteries) were obtained. Completion of the telegraph was required six months from the date of the contract.

in April 1858, having gained a senior position with contractors McNaughton & Co. of Launceston, and went to England to supervise the construction of the first submarine cable to link Tasmania with the mainland. On his recommendation Mr J. Reynolds Ball was appointed his successor.

Confusingly, there were two senior posts of Inspector and Superintendent of Telegraphs. Butcher held the latter posi-



Photos: E.F. Jones

*Morse telegraph station, c.1900.*
*National Postal & Telecommunications Museum, Hobart*

There were numerous applications for the post of Superintendent of Telegraphs, including one from a Mr Edwin Pears on 14 March 1857 who claimed, 'I have seen the working of the English telegraphs and have a practical acquaintance with Morse's system – the one proposed to be adopted in this Colony.' However, records show that W.H. Butcher received the appointment on 1 July 1857. He resigned the post

tion whilst the Director of Public Works, Mr W.R. Falconer, was also the Inspector of Telegraphs. In practice, Butcher was the builder and operator while Falconer controlled the financial side on behalf of the Colonial Treasurer.

### *First Telegraphic Message*

The Hobart Town *Mercury* newspaper reported that the first telegraphic message

*Top section of telegraph pole using a locally cut Cypress Pine pole (erected 1871); part of the great overland Darwin to Port Augusta line completed in 1872. This pine grows naturally in the area and is impervious to white ants and other termites.*

*National Postal & Telecommunications Museum, Hobart*

from Hobart to Launceston had been dispatched by themselves on 8 July 1857 and an answer received on the same day, by courtesy of Mr Butcher, then described as 'Inspector of Telegraphs in Tasmania'.

A separate report records that the first telegram was sent over the line by Mr E.S. Chapman of the *Australian* newspaper on behalf of the *Mercury* but much to the disappointment of the originator the text of the message appeared first in the *Australian*.

Several messages were sent that day until a break occurred in the under-water cable at Bridgewater, near Hobart, where the line crossed the River Derwent. The line was officially opened for public use on 10 August 1857. The *Mercury* report ended on a sour note of condemnation of the activities of certain other papers which used the report of their initiative, 'The miserable abortions in this city – mis-called newspapers – have filched from us, without the slightest acknowledgement, the whole of our extraordinary *verbatim et literative*. We are, at all times, quite willing to impart a little vitality to these wretched prints with extracts from this journal, but as our intelligence is obtained by great personal exertions and by means not available to the pilferers, we expect, at least, an acknowledgment of transfer'!

### *Telegraph Hotel*

Butcher controlled the Hobart Telegraph office which had been set up near the wharves in a building previously occupied by the water police. That activity is commemorated by the appropriately named 'Telegraph Hotel' on the corner of Brooke and Morrison Streets which is close by the original site.

Eventually the office was re-located in the Old Guard House, at the corner of Elizabeth and Macquarie Streets in the heart of the city. In 1859 the *Mercury* had published an editorial about the action of the Imperial Authorities in releasing all manner of buildings and stations hitherto used for Convict purposes and had suggested that the Old Guard House would make an ideal site for a telegraph station (later, in 1883, this building housed Hobart's first telephone exchange).

### *Submarine Cable*

A major development in communications was a series of attempts to link Tasmania with the mainland. As early as 1853, before a Morse telegraph line had been constructed anywhere in Australia, the Royal Society of Tasmania had debated a report by W.J. Macquorn

Rankine, of Glasgow, Scotland, who had proposed a submarine cable from the mainland to Tasmania to link up with the proposed Great Empire Trunk Telegraph Line which would connect Europe to Australia via India and Malaysia.

The first Tasmanian under-water cable, 117 miles long, was laid in 1859. By comparison, the UK/Holland link was 113 miles long. Unfortunately, operation was unsatisfactory and erratic and, due to major defects, it was abandoned in 1861. The Superintendent of the line, Mr F.A. Parker, reported that 'it was never in working order... and business seldom commenced, until 11, 12, or 1 o'clock'.

A second cable, via a different route, was completed in 1869. Although subjected to abrasion problems, it operated without serious breakdown until 1884. In 1868 the British Government had signed an Agreement with the Cable Company (which also had an interest in the intercontinental cable) granting it the exclusive right of submarine communication between Victoria and Tasmania for a period of thirty years, commencing from the date the company opened telegraphic communication between the two Colonies.

*To the Outside World*

An important date in the history of Tasmanian communication with the outside world was the completion in 1872 of a telegraph line between Darwin in the Northern Territory (terminal of the newly laid overseas cable) and Port Augusta, South Australia, which enabled the first message to be transmitted to England from Tasmania on October 20 of that year, with one received from London three days later.

In all, six submarine cables were laid between Victoria and Tasmania over a period of fifty years (1859–1909). In 1906, the Marconi Company gave a successful demonstration of wireless telegraphy over the Tasman Sea but the existence of the submarine cable link meant that there was no official enthusiasm for the new medium.

Landline and submarine cable Morse telegraphy continued through the first half of the twentieth century until, as elsewhere, it was overtaken and eventually replaced by other telegraphic systems and by telephonic communication.

*Museum Exhibits*

The National Postal and Telecommunications Museum in Hobart holds an interesting collection of early telegraphic equipment.

The items are identified as being typical of the period but it was not possible, when I visited there recently, to obtain confirmation that all the exhibits had been in service in Tasmania. With the kind permission of the museum I took a number of photographs, two of which are used to illustrate this article.

*References*

Brochure, 'Tamar Valley Signal Stations'.
Archives Office of Tasmania.
The Hobart Town *Mercury* newspaper.
Tasmanian Historical Research Association – extract from report, June 1953.
National Postal & Telecommunications Museum, Hobart, Tasmania.
Telecommunications Society of Australia
*Clear Across Australia*, by Ann Moyal.
*Seas no Longer Divide*, by Alan Tulip.

*MM*

# Club Profile – 6

## The Belgian Telegraphy club (BTC)

THE PRINCIPLE AIM of BTC is to stimulate Morse telegraphy on all amateur radio bands, between Belgian stations themselves, and between Belgian and foreign stations.

The club is a member of the European CW Association and as full EUCW-club members, BTC members are entitled to participate in all EUCW activities arranged by other member-clubs or by EUCW itself (see MM18, p.22).

There are no speed requirements or other restrictions on membership and foreign members are welcome.

*Membership Requirements*

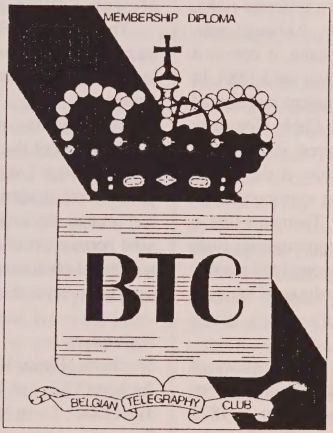
All radio amateurs and short-wave listeners (SWLs) willing to identify with the principle aim of the club may become members of BTC after confirming the following contacts:

**Applicants from Belgium (ON)** – two-way CW contacts with 15 different ON stations.

**Applicants from Europe (outside Belgium)** – two-way CW contacts with 10 different ON stations.

**Applicants from outside Europe** – two-way CW contacts with 5 different ON stations.

Short-wave listeners should include details of both stations heard in the qualifying QSOs listed in their applications.




*The BTC Membership Diploma*

*Membership Diploma*

Contacts made on any band after 1 January 1980 are valid to meet membership requirements and all new members receive an attractive BTC membership diploma, A4 size, (see left) printed in four colours on glazed card.

*List of Members*

The current membership is approximately 280. A list of members is available on receipt of an SASE from Belgium, or self-addressed envelope plus 1 x IRC from other countries.

A rubber stamp with the BTC logo (as reproduced at the top of this page) is available to members for 400 BF, £6.00, or US$13.00.

***Proposed Award***

It is planned to introduce a 'Worked BTC' award, possibly in the Spring of 1993.

***Applications***

Applications for membership, enclosing log extracts confirming the qualifying contacts (no QSL cards), and a fee of 10 IRCs or 5 DM or US $3.00 or 100 BF, should be sent to Luc Vinck ON7VU, BTC Award Manager, Boekweitlaan 3, B-2500 Lier, Belgium. (Allow 2 months delivery for the diploma). ***MM***

*(Our thanks to ON7VU for his assistance in preparing this profile).*

# Readers' ADs

## WANTED

**Key & Plug Assembly No 9**, various types. Particularly wanted, three-bridge ZA/CAN 0982 Key & Plug Assy No 9. Have other No 9 Assemblies for trade. Write to Chris Bisaillion VE3CBK, 1324 Old Carp Road, RR No 1, Kanata, Ontario K2K 1X7, Canada.

**A/M Publication AP1086**, Issue 1. Has anyone a copy for disposal or can anyone suggest how I might obtain a copy? Murray Willer VE3FRX, 557 Spadina Road, Toronto, Ontario M5P 2W9, Canada.

**Manual Circuit for SAIT ER400** Marine Transmitter. Good price paid. Tony Bull G3ICB, 91 Lower Way, Thatcham, Berks RG13 4RS, England. Tel: 0635 864345.

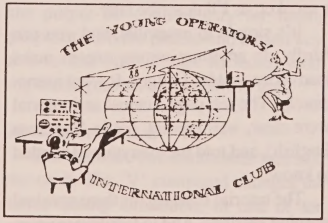
**Technical Manual**, or Schematic, for Siphon Recorder, US Navy type SC-10, made by Waters-Conley, Minnesota. Please contact John Gilbert ON4AGJ, Rustenburgstr. 73, 8000 Brugge, Belgium.

## EXCHANGE

**French collector** has a number of keys for exchange (French, German, American, Italian, Czech, Japanese), some from 1920s. Send for details to Jean le Galudec, 26 Rue de l'Oratoire, 54000 Nancy, France.

---

The organiser of YOP is Andy Troubachov UA3PIP, who has recently had several interesting letters published in *Morsum Magnificat*. If readers are interested in writing to him for information about the new club please send an s.a.e. or IRC to: MM, 1 Tash Place, London N11 1PA, England, for Andy's address in Russian. This is needed as, owing to problems with the postal service, envelopes addressed to him in English text do not always reach their destination.




**UNDER 29 AND ENJOYING CW? JOIN US! LET'S HAVE FUN TOGETHER!**

# The CMOS Super Keyer II

IN RESPONSE to our request in MM23 for readers' views on the CMOS Super Keyer II, two reports have been received on this highly advanced memory keyer which was originally described in the November 1990 issue of *QST*, and is now featured in the *ARRL Handbook*.

The first is from Gary Bold ZL1AN, who reviewed the Super Keyer II kit in his 'Morseman' column in *Break-In*, journal of NZART, May 1992, as follows:

*Simple to Assemble*

There's only one (socketed) chip, two transistors, and a handful of passive components. An easy hour's work, to stuff and solder the board. It took longer to put it into a box, pre-used but new looking, from the junk-box, with a three-cell battery holder for the three penlight NiCads I decided to power it with, mount some jacks and connect a speaker. You need a speaker, as I'll describe later.

It's simple to assemble, and you can hardly do anything wrong except make inadvertent solder bridges. It went immediately. The ten-page manual and tutorial were clear, well typeset, not in 'Japanese English', and told me everything I needed to know.

The tutorial is set up for three nominal learning sessions. And to familiarise yourself with all of this keyer's capabilities, you'll need them.

*Software Driven*

This keyer is philosophically different from any other keyer you'll have used. The schematic (copyright, printed here with permission) tells us that the chip is a CMOS 68HC705C8 microprocessor, clocked with a 2MHz ceramic resonator. Instead of hard-wired logic, this keyer is driven by software stored in an 8K PROM on the chip – which also has enough RAM to store 220 characters in up to four messages. The state of the four push-to-make buttons which you mount on the top of the case, and the dot/dash paddle inputs, are read from six bits of an I/O port.

The sidetone speaker is driven via Q2, and the output (KEY) via Q1, from two other port bits. The speed pot, R13, in conjunction with the timing capacitor, C8, forms an *RC* time constant which is sensed, in software, with yet another port bit. I had a red LED already mounted on the front of my used box so I wired that in for a bit of visual impact. The tone coming through the monitor now flashes the LED as well.

*Zappy!*

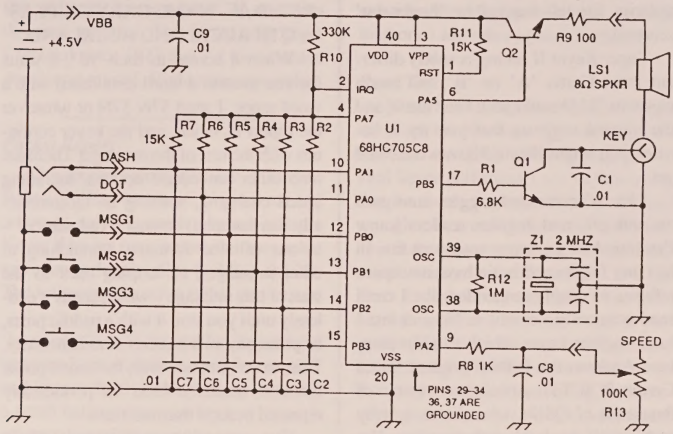
You don't switch it off. After two seconds of inactivity, the clock stops and the keyer powers down to into a 'wait' mode, drawing less than 10 µA. It starts again immediately you do anything. It's really a little computer, and this is what makes it so versatile.

*Versatile*

Boy, is it versatile! At the simplest level its just a well-behaved RF-immune iambic keyer, with the usual analogue knob which varies the speed linearly over a 3:1 range.

Now the eyebrow raisers. You can command and interrogate this keyer in Morse, using the paddles. A command knob range can be set to any 3:1 ratio. I've set mine for 12 to 36 wpm.

'Tnn' sets the sidetone frequency to nn0 (500–900)Hz. You can choose the speed at which the keyer talks to you, and you talk to it. You can tell it to set the element weight, and/or speed-independent weighting compensation, reverse the dot and dash paddles, turn




*Circuit of the CMOS Super Keyer 2* *©Copyright Idiom Press*

sequence is initiated by pushing buttons 1 and 2 simultaneously. The keyer sends 'F' through the speaker (that's why you need it) without keying the transmitter, and waits to be told what to do. Now you can send one of 18 different commands – each a different Morse letter – some followed by digits.

Examples: 'M' toggles the audio sidetone on or off. 'S25' sets the speed at 25 (range 06 to 60) wpm, at the current knob position. This means that the speed the output on continuously for tuning purposes, turn the paddle into a hand key, and several other things. Including loading messages, but we'll come to that.

*Emulation Options*

But there are two commands that sold me on it. The 'V' command changes the keyer timing emulation, to one of ten options. It can emulate both Curtis 'A' and 'B' (Accukeyer) timing, and another interesting one called 'Super Keyer II'

timing. Each is emulated fully iambically, with a choice of both or either dot and dash memories. Or it can emulate straight iambic timing, with no memories! That means, for Field Day, multi-operator contest, or 'shopping mall demonstration' occasions, you can set the keyer up to feel comfortable for whoever sits down in front of it – including changing the paddle polarity for left-handed or 'finger-dot' senders!

Super Keyer II timing is subtly different from Curtis 'A' or 'B', but much closer to 'B' (Accukeyer). I can use it, and the manual suggests that you try it because you might like it. I haven't decided yet.

The 'A' command toggles autospace on and off, and regular readers know I'm Hamdom's greatest autospace fan. In fact, my fingers and brain have autospace reflexes so deeply embedded that I can't send accurately without it. Now at last I have another keyer which exactly emulates Andrew, the faithful original James Garrett PCB TTL Accukeyer, veteran of thousands of QSOs, who sits resignedly on his shelf, his knob gathering dust. I'm sure he knows that I may never use him again!

*Memories*

This keyer also has four memories. To load one, you depress any button for two seconds until the keyer beeps and sends 'C'. Then you send the message with the paddle. After each word, you pause until it sends a fast high-pitched 'I'. If you make a mistake, send the error character. It erases the word, plays back the last (correct) word before that and waits for you to enter the bad one again. When finished you press the button again briefly. Now, to play that message you just depress that button. You can queue up to eight button pushes. You can load at any speed and replay at any speed. Since you never switch it off, the messages never go away.

There's more. You can embed pauses and timed spaces in messages. In memory 2, I have:

RST /B /B – NAME GARY GARY ES
QTH AUCKLAND AUCKLAND

When it comes to each '/B', it waits for you to send a word terminated with a word space. I send 57N 57N or whatever the report is, twice, and the keyer continues with the rest of the message! There are nine other embedded options, including speed changing, sending an (automatically incremented) contest serial number – in one of nine formats – branching to other messages, or looping back to the start of this message – which sends it endlessly until you stop it with a paddle press, or press any two buttons simultaneously. This, in conjunction with the timed pause function, makes it ideal for periodically repeated beacon transmissions.

I've put a three by three CQ in memory 1, so the keyer can call CQ for me while I'm finding my pencil and pulling out the logsheet. I put the other station's callsign in memory 3, during his first over. I have ZL1AN in memory 4. Thereafter, pressing buttons three and four in succession sends the callsign exchange at the start of each over.

*Inquiry Mode*

With so many options, you'll often forget how you've set them. So if you push buttons three and four simultaneously you invoke 'inquiry mode'. The

keyer sends '?' in Morse and waits. Now you can send one of nine Morse letters to ask it questions. 'S' causes it to send you its current speed in wpm. You can find out what message memory is left, what keyer it's emulating, what the weighting, compensation, monitor frequency is, and several other things.

The bottom line. The people who wrote this software knew what CW operators do, need and like. This is the only keyer I've used since 1977 that I'd love to have developed myself. Highly recommended.

---

*Packet Report*

Our second report comes from John L. Rehak N6HI, who uses CW in his car and who was so enthusiastic about his Super Keyer II he put out a report on it on packet radio immediately after building the kit. The following are some of his comments:

'I was particularly excited by its potential because I am strictly a mobile operator and I knew that I could certainly use such a small battery powered keyer with such advanced capabilities in the car.

I added a couple of small "mods" of my own when I built the unit. I added a switch in series with the "keyed line" output jack so that I can disable the keyer's output and use only the built-in monitor function without having to unplug the keyer from my transceiver. This can be handy for quick "warm up" sessions, practice, etc., without having to disable transmitting at the rig end.

I also added a second switch (ganged to the keyer's speed control) to disable all four memory buttons. The keyer does not have a power switch and in its primary application as a mobile keyer in my car, when stored between use, it could easily end up laying against something that would activate one or more of the memory buttons, keeping it from entering the "sleep" mode, thus draining down the batteries prematurely or erasing the message memories! (I didn't want to simply add a power switch because removing power entirely would wipe out my message memories and other optional settings).

*Road Test*

I took it on the road and put it through its paces on 10 meter CW mobile. In a word, it was GREAT! The only lack of total keyer perfection I see in this unit is that the monitor speaker is not really loud enough to hear easily above the road noise. This makes re-programming "on-the-road" a little tricky, but still possible... I just have to listen very carefully! For most normal operation, once the keyer is programmed with my favorite messages, and options are set, I will rarely have to change them anyway. I find that having the memories is very handy in the mobile, where an operator benefits from anything that makes operating easier.

This is a fantastic keyer which I feel compares favorably with many more expensive keyers having more knobs or switches while offering less facilities. The paddle programming is a great innovation which makes operation very simple and allows the keyer to have advanced features without requiring a keypad or lots of switches.

*Improvements to Chip*

The above notes were written in November 1990 and I have now built two

of these keyers. They go together very easily and I highly recommend the kit version. My first one ran for 14 months on its original alkaline batteries ... with no power switch!

Some very significant improvements have been made to the chip since the original *QST* article. The "version II" circuit includes:

- Curtis and Accu-Keyer timing emulation
- New super-speed "burst mode" up to 990 wpm for meteor scatter
- Soft sectored message memories
- Programmable monitor tone
- Useful new control and "embedded" commands.

I am wildly enthusiastic about this amazingly clever Super Keyer II and recommend it very highly. Of the many keyers I have used it is by far the best.

73, John N6HI.'

---

*Kit Details*

The keyer is available as a partial kit from Idiom Press, providing a single 40-pin pre-programmed chip plus all on-board components on a printed circuit board 1.4 x 2.4 inches, with layout diagram and schematic. Other, readily available, parts need to be obtained by the constructor, i.e., a suitable enclosure, a 4.5 volt battery supply, speaker, potentiometer, push-button switches, all input/output connectors, and of course the paddles.

The keyer handles low-voltage, positive line rigs only, in other words the typical modern transceiver. Older equipment with valve (tube) finals or negative key line will require a suitable interface circuit between the keyer and the transmitter.

*Ready-built Versions*

An enhanced ready-built version is available in the USA as the Logikey Model K-1. This has built-in positive or negative keying but again requires external paddles. An optional push-button accessory bracket is available which fits any Bencher paddle and, according to the makers, can be adapted for many other paddles as well as for the kit.

A German keyer, the Samson ETM-9C, has the same technology (by arrangement with Idiom Press) including positive or negative keying. This comes in two versions, one with and one without integral paddles.

*Availability or Further Information*

The CMOS Super Keyer II kit is available from Idiom Press, Box 583, Deerfield, Illinois 60015, USA, price $48.00 post paid in the USA and $50.00 post paid to all other countries. Payment in US funds only, credit cards not accepted.

The ready-built Logikey Model K1 is available from Logikey at the same address, price $119.95 plus $5.00 shipping in the USA, or $10 for airmail worldwide. The Bencher KB-1 push-button bracket is $29.95 plus $5 airmail.

The ready-built Samson ETM-9C (with integral paddles) or the same keyer without paddles, the ETM-9COG, is available in the UK from Frank H. Watts G5BM, Woodland View, Birches Lane, Newent, Glos. GL18 1DN (see MM24, page 5, for further details).

*MM*

# MM Christmas Competition 1992

- ✔Make a Morse palindrome and win a year's free subscription to MM!
- ✔Nominate a Morse friend for a similar prize!
- ✔Consolation offer to unsuccessful nominees!
- ✔Help *MM* by telling your Morse friends about our magazine!

***Find a Morse Palindrome***

A palindrome is a word which reads the same backwards or forwards, for example, MADAM, DEIFIED, TOOT, REFER.

The competition is to find the longest possible Morse palindrome, i.e., a word which spells the same backwards or forwards **in Morse symbols**. An example is WAITING which has 15 symbols.

The winner will be the reader who submits the longest Morse palindrome with more than 15 Morse symbols (i.e., dots and dashes, excluding spaces). In the event of a tie the winner will be drawn from a hat containing all tied entries.

***Prizes***

The prize will be one year's free subscription to *MM* continuing on from the winner's existing subscription, **ALSO** one year's immediate subscription to a friend (not already subscribing to *MM*) nominated by the winner.

***RULES:***

1. The competition is open only to subscribing readers of *Morsum Magnificat*, world-wide.
2. Only one entry is permitted from each subscriber.
3. All words submitted must be in the English language (but not acronyms) and found in a recognised English or American dictionary and the number of Morse symbols claimed must be stated.
4. Entries must be accompanied by the name and address of a friend nominated for the 'friend's subscription' prize. Entries without such a nomination cannot be accepted.
4. Entries should be sent to Morsum Magnificat, 9 Wetherby Close, Broadstone, Dorset BH18 8JB, England, to be received **not later than 27 March 1993**. This late closing date has been chosen to give overseas subscribers who receive *MM* by surface mail an opportunity to take part in the competition.
5. The winner will be announced in the Spring 1993 issue of *Morsum Magnificat*, MM27.
6. No correspondence can be entered into. The Editor's decision is final on all matters relating to this competition.

***Consolation Offer to Nominees***

All unsuccessful nominees will be offered the opportunity of a special first year's subscription to *MM* – five issues for the price of four!

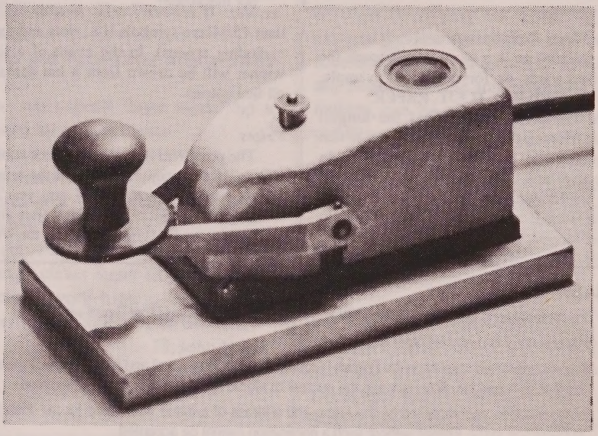
So tell a friend about *Morsum Magnificat*; get him or her to help with the competition to increase your chance of success; and include the name and address of your nominee when you send your competition entry.

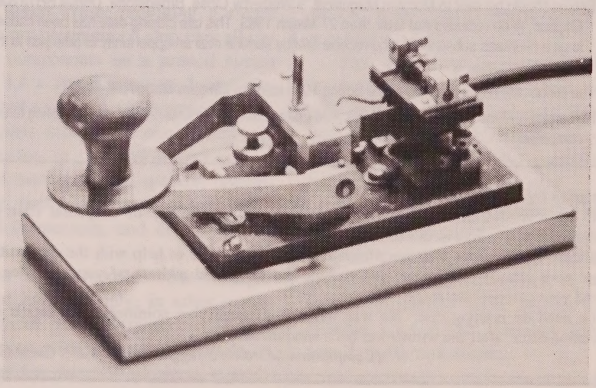
You need do nothing else. We will write to all qualifying nominees with details of our 'consolation offer' after the winner has been announced.

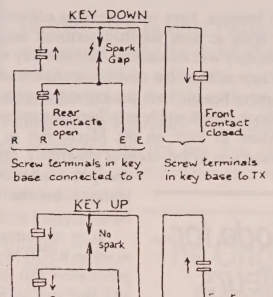
*(Competition based on a suggestion from Bill Guest G4IYB)*

# Showcase

*Featuring keys and other collectors' items of telegraphic interest.*
*If anyone can add to the information given please contact TS*



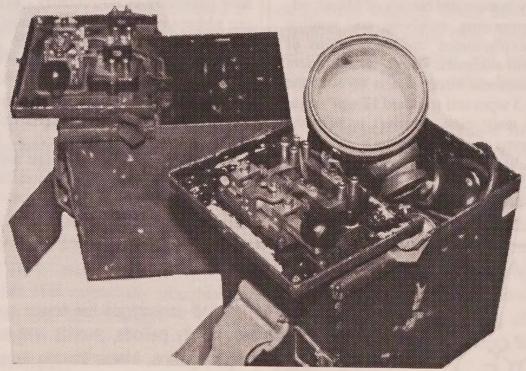





*Circuit arrangements of the key shown in the photographs opposite. This seems to be a very unusual key, having a separate spark gap. In the top view, note the window through which the spark-gap can be observed.*

*In the key-down condition, the voltage across the spark gap must be high to provide spark, for two purposes:*
*(a) To give visual indication of keying, visible through window in cover.*
*(b) Perhaps to mute receiver when key down, but why such high voltage? Perhaps old type of receiver? Ideas please!*

*Collection/photo: Jon Hanson G0FJT*



*Two interesting boxes photographed in a junk shop in Tasmania. Marked:*
*Lamp Signalling Daylight - Short range; Case MK 1 : Aust.*
*Lamp Signalling Daylight - Long Range. Projector MK II, STROMBERG CARLSON 1942.*
*Can anyone provide further information about these lamps, particularly what their ranges were?*

*Photo: Ted Jones G3EUE*

# The Morse Code for Radio Amateurs

*Seventh (revised) edition, 1992*

**A Book Review**

*by Tony Smith*

THIS BOOK was originally written in 1947 by Margaret Mills G3ACC, and over the years it has become the RSGB's standard publication on learning the Morse code.

This seventh edition has been completely revised and its scope expanded by George Benbow G3HB, who says in his introduction: 'The aim is to interest people in the Morse code as a new and different language with which one can communicate world-wide, and not to regard it as an annoying obstacle in the acquisition of a Class A licence.'

Eight chapters and an appendix, in 28 packed pages, include a brief review of the advantages of Morse telegraphy; a short (and slightly inaccurate) history of Morse; advice on memorising, receiving and sending the code; explanations and descriptions of straight, semi-automatic (bug), and different types of electronic keys; details of both the UK Novice 5 wpm and standard 12 wpm amateur Morse tests; nine exercises to help the learner become proficient in the code; and a list of miscellaneous Morse characters, procedures, punctuation, etc.

Many Morse classes in the UK, as well as lone learners, have used previous editions of this book as their standard textbook and no doubt they will continue in the same way with this new edition. No doubt, too, students will get more benefit from the expanded scope of the book, which will hopefully encourage more of them to look on the Morse test as an introduction to the world of telegraphy, rather than just a ticket to telephony on the HF bands.

It is encouraging to see an RSGB Morse publication that actually sets out to promote CW apart from just teaching the code. It is even more encouraging to read on page 27: 'The Morse code enthusiast will find much of interest in the quarterly journal *Morsum Magnificat* which is now published in this country', even though our address is not given in the book!

*The Morse Code for Radio Amateurs* (7th edition) by George Benbow G3HB, is published by the Radio Society of Great Britain, Lambda House, Cranborne Road, Potters Bar, Herts EN6 3JE. RSGB mail order prices are: (members) £2.98, (non-members) £3.51, plus postage and packing £1.00 (UK) or £2.50 (overseas surface mail ).

*MM*

## G-QRP Club

The G-QRP Club promotes and encourages low-power operating on the amateur bands with activity periods, awards and trophies. Facilities include a quarterly magazine, Morse training tapes, kits, traders' discounts and a QSL bureau. Novices and SWLs welcome.

Enquiries to **Rev. George Dobbs G3RJV, St Aidan's Vicarage, 498 Manchester Road, Rochdale, Lancs OL11 3HE.** Send a large s.a.e. or two IRCs.

# The Origination of the Bencher Paddle

*by Bob Locher W9KNI*

THE BENCHER IAMBIC PADDLE represented by the BY-1, BY-2 and BY-3 models, as well as the special Japanese models JA-1, JA-2 and JA-3, are derivations of the legendary FYO paddle series originated by the late Joe Hill W8FYO. Mr Hill, a talented designer and machinist, designed his first paddle as a traditional single lever non-iambic paddle for the popular keyers of the day. The most notable keyer of the time was the famous W9TO keyer, as developed by Jim Ricks and marketed by the Hallicrafters Company.

The original FYO design featured a tension spring attached to a lead screw at one end for tensioning adjustment, with the other end attached to a finger pad pivot frame, with the pivot frame resting on hardened steel pivot points. The paddle offered a smoothness and responsiveness unmatched by other designs on the market, and quickly achieved cult status among CW operators. Although evidence today is sketchy, it appears that only a limited number of these models were ever built and sold. Mr Hill eventually obtained a patent for his innovative design.

### *Iambic Techniques*

Shortly after these paddles became available, the iambic technique of keying was developed and began to become popular. Paddles such as the original FYO design and the like, although usable with iambic keyers did not allow the use of iambic keying techniques. None the less, of all the paddles available on the market commercially at that time, only the FYO lent itself to easy modification to become iambic paddles, and a number of existing FYO paddles were so modified.

Mr Hill then began the manufacture of iambic model paddles of similar design to his original FYO series, but only a few were ever sold and, for reasons unclear, he abandoned the business. As a result, the existing paddles became eagerly sought after on the used equipment market, often commanding significant premiums over their original selling price. Original and unmodified single lever FYO paddles became collectors' items.

A number of firms and individuals are believed to have approached Mr Hill about securing a licence to his patent with an eye towards bringing the paddle back to the market. However, Mr Hill seemed unwilling to enter such an agreement with anyone and the FYO paddle remained a very scarce item. During this time, iambic paddles were otherwise being offered by Vibroplex, Brown Brothers, and Ham Radio Centre.

George Zielinski W9OA, then W9OAH, was one of the people trying to secure such a licence from Mr Hill, but without success. Frustrated by Mr Hill's apparent lack of co-operation, Mr Zielin-

ski secured a copy of Mr Hill's patent and had it examined by a professional patent attorney, Bill Serp W9RER, now W9RT, and asked for a professional opinion. Mr Serp reached the conclusion that the original patent was certainly valid, but only covered a single lever non-iambic paddle.

*No Patent Barrier to Iambic Version*

Under US patent law, Mr Hill would have been able to patent the iambic paddle as an improvement to the original design within a year after offering the improved model for sale, but for whatever reason had not done so. Mr Serp's professional opinion was that there was no patent barrier to prevent Mr Zielinski from bringing an iambic model of the FYO design onto the market without Mr Hill's approval. On the basis of this information, and with no comparable paddle on the market, Mr Zielinski designed a paddle similar to the original FYO iambic model and entered production.

However, unknown to Mr Zielinski, the highly respected firm HAL Communications of Champaign, Illinois, had managed to secure a licence from Mr Hill to produce a paddle under Mr Hill's patent. HAL Communications was at that time offering an iambic electronic keyer and had decided that offering the keyer with an iambic paddle would help sales. Licence in hand, HAL initiated their first production run.

By considerable coincidence, both HAL and Mr Zielinski decided to introduce their new paddles at the 1975 Wheaton Hamfest, a winter hamfest held in the Chicago area. Needless to say a confrontation quickly occurred, with HAL possessing a legitimate licence, for which they had paid money, giving them the exclusive right to manufacture the FYO paddle, and Mr Zielinski holding a professional legal opinion that the patent was not valid for iambic paddles. (There never was a dispute over the validity of the patent for non-iambic models.)

*Cheaper Product*

While there was of course no question of HAL's right to manufacture their product, at issue was whether Mr Zielinski had any right to offer the product he was demonstrating and selling. It should be noted that there was a considerable difference in price at that time as well, with Mr Zielinski's product being significantly cheaper, adding to HAL's ire. The confrontation ended in a standoff, with HAL threatening legal action against Mr Zielinski should he continue to promote his product.

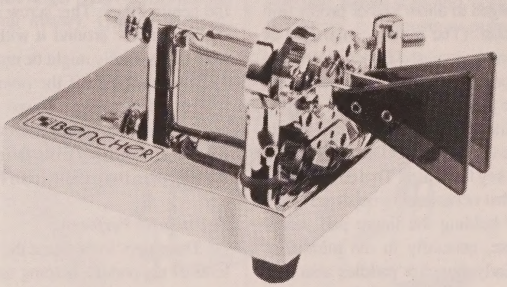
At this point Mr Zielinski's personal fortunes began to change in other areas. The death of a relative brought a need for him to quit his prior job and take over the management and eventual ownership of a hot forging firm. This change placed a considerable drain on his time. Further, with the threat of legal action hanging over him, Mr Zielinski elected to take a very low profile in marketing his paddle and once his initial production runs were sold he discontinued offering his paddle, having sold a few hundred units.

HAL in the meantime continued to market their paddle, offering it only in conjunction with their electronic keyer. However, sales proved disappointing to HAL and at the same time an internal costing study revealed to them that they were losing money on the product at the

offered selling price. With sales already at a disappointing level, HAL felt that they could not raise the price to a level where they could make an adequate profit margin, and this led them to quietly discontinue the manufacture and sale of their model of the paddle. Once again a paddle built to the FYO design was no longer available on the market.

A contact was made with Mr Zielinski who was, in fact, willing to consider selling, and after a careful review of the patent situation negotiations to take over the line were successfully concluded. Thus the Bencher paddle was born.

After reviewing the design and the available tooling, Bencher decided to re-tool the product prior to manufacture, and




*Bencher single lever paddle, model 170-22, with chrome base*

***Enter Bencher Inc.***

This situation prevailed for over a year. Then, K9MM, John Becker, suggested to the author that the author's firm, Bencher Inc., might have an interest on purchasing Mr Zielinski's design and tooling, and re-introduce his version of the paddle to the market. At that point Bencher was a firm three years old, engaged in the manufacture of professional photographic and video copy stands, as well as graphic arts camera shutters.

The suggestion offered immediate appeal, as the manufacture of a paddle would utilise comparable skills to those already possessed by Bencher employees. took the opportunity to implement design changes suggested by Mr Zielinski and the author. Existing tooling was replaced with newer fixtures designed for higher production at lower cost. Suppliers of services such as screw machine parts, painting and plating were lined up, and production soon commenced. Advertisements were placed, dealers were appointed, and the first paddles were sold.

***No Objections from HAL***

A meeting was held with the President of HAL Communications and resulted in an understanding with HAL. While HAL felt they had a valid licence and that

the Bencher product was in violation of the patent, they none-the-less indicated a recognition of Bencher's point of view, and indicated that they would not pursue legal action over an iambic paddle.

The product proved an immediate success, and for the first few months Bencher had difficulty meeting demand. Additional design improvements were implemented as production continued, and as sales further increased the tooling was again changed to allow higher production at lower cost. (The initial capital cost of such tooling had caused Bencher to adopt a less expensive approach until the success of the product was assured.)

The first change made in the paddle was to use two screws to fasten the finger pad to the key lever arm. This eliminated a problem that occasionally occurred when the screw holding the finger pad would come loose, generally in the middle of a QSO. Early Bencher paddles also suffered from two notorious failings, upsetting to any operator. As long as the paddle was used properly everything worked very well. But should the operator bump into the finger pads from the wrong angle all hell broke loose.

*Discombobulation*

The paddle would slip off the pivot points, invariably closing one or both contacts and sending a stream of dots, dashes, or iambic pairs out over the air. And, frequently, as a result of being thus discombobulated, the tension spring holding everything together would come loose and go flying, generally ending up underneath the linear power supply case, there to remain safely hidden in spite of the most imaginative curses.

Curing the spring problem was simple – the spring end loops which rested on the tensioning screws were pinched down to force them to remain on the screws even when the paddle assemblies came off the pivot points. The solution to that problem took a little more ingenuity, since any cure could not be accepted that would reduce the responsiveness of the paddle.

Finally a solution was developed by drilling and threading a pair of holes in the centre block. This screw allowed the frame to move around it without contact until the assembly might be moved enough to allow slipping off the pivot points. At this point the pivot frame would jam against the new capture screw, and limit the movement away from the pivot points, thus keeping the paddle from falling apart.

*Dependable Performer*

These two 'fixes' cured the major problems of the paddle, helping turn a skittish racehorse into a dependable performer, yet without losing the responsiveness that the CW operator demands. Other changes were also made in the paddle as time went on. The paddle base was changed from half-inch steel plate to ⅝ inch leaded steel plate to give more weight on the operating table and reduce any tendency for movement around the table.

The pivot points were initially chrome plated brass, but went in progression from steel eventually to stainless steel, and from conventional screw machine parts to Swiss screw machine parts. These moves solved minor production problems and further improved the quality of the product.

Fasteners on the paddle, originally steel plated, were eventually changed to stainless steel, as was the tension spring.

A special Fahnestock clip was ordered from a supplier to serve as a tool holder for the adjustment hex wrench. Packaging the paddle was a problem until Ken Neuffer W9ZA, a supplier of packaging materials, came up with a design that proved effective. Paddles no longer suffered shipping damage.

### *Finger Pad Tale*

The plastic finger pads themselves had an interesting history. George Zielinski had selected them from a catalogue of stock plastic parts from a plastics jobber in Chicago and Bencher continued to order from that source. Even though the quantity of parts ordered rose considerably after initial production was begun, the price remained unattractively high. None the less, the actual manufacturer of the parts could not be located in spite of a search through industry catalogues.

However, an order for parts coming in supplied a lucky break. The local jobber had received his order from his supplier and simply used the supplier's shipping box to re-ship the parts to Bencher. Unfortunately for the jobber, the manufacturer had taped the box closed with packing tape over-printed with his name and telephone number. A quick phone call found a new supplier whose per piece cost was, by remarkable coincidence, exactly half of the prior supplier's price.

Eventually, Bencher invested in an injection mould tool and began to have the finger pads custom manufactured, resulting in more uniform parts and better quality. One other note of interest on the finger pads remains. When Bencher first offered the paddle, several calls were received from amateurs stating that they liked the looks of the paddle, but couldn't it be supplied with RED finger pads? The author can personally attest that it required some summoning of tact and patience to be able to respond politely, if negatively, to such requests.

*Bencher iambic paddle, model 170-02, with chrome base*

*continued on page 34*

# American Telegraph Instrument Makers 1837–1900 (Part 3)

©1986 by Roger W. Reinke. Reprinted by permission from files of the Morse Telegraph Club, Inc.



| MAKER | ADDRESS | CITY | DATES | PRODUCTS | NOTES |
|---|---|---|---|---|---|
| Redding Electrical Co. | 30 Hanover St. | Boston | 1884-85 | General line | |
| Redding, Jerome & Co. | Same | Same | 1877-82 | Same | (S) Redding Electrical? |
| Richards, J.B. | 621 Grand St. | New York | 1854 | Registers | [See House, Royal E.] |
| Rogers, H.D. & Co. (A) | | Cincinnati | | | |
| Rogers, Henry J. | | | 1850 | | "improved" Bain's patent. |
| Rogers, J. | | New York | c. 1850 | Relays | Same as Henry? |
| Sargent, William D. | 812 Race St. | Philadelphia | | | (S) U.S.Telegraph & Supp. Co. |
| Schuyler & Smith | | | 1843 | Registers | 100 pounds plus. |
| Shain | | | | | [See Knox & Schain] |
| Shaw Electric Co. (A) | | Philadelphia | c. 1880 | Practice sets | |
| Shawk | | | | | [See Hicks & Shawk] |
| Shawk & Barton (V) | 98 St. Clair St. [12] | Cleveland | 1869 | General line | (S) Hicks & Shawk |
| Shawk & Foote | 55 Center St. | Cleveland | 1870 | | |
| Smith, Charles T. | | Washington | c. 1844 | Magnets | For Morse |
| Smith, F.C. | 1041 Penn Ave. | Pittsburgh | 1886 | "Herbert" key | |
| Smith, Gilbert | | | | | [See Schuyler & Smith] |
| Speedwell Iron Works | | Morristown, N.J. | 1837-38 | Port rules, registers | Wm. Baxter & Alfred Vail, principals. |
| Splitdorf, H. | | | | | [See Clark & Splitdorf] |
| Springer, L.C. (A) | 162 S. Water St. | Chicago | c. 1865 | General line | |
| Standard Electric Works | | Cleveland | 1883-84 | "Stevens" keys | |
| Standard Electric Co. (A) | 502 Fourth Ave. | Louisville | 1886 | | |
| ...Same... (A) | 410 Third Ave. | Same | 1888 | | |
| Stokell | | New York | 1846 | Magnets | For Morse |
| Telegraph Supply & Mfg. Co. | 130-134 Champlain St. | Cleveland | 1871-74 | "Dirt Cheap" Instruments | |
| ...Same... | Leader Bldg. | Cleveland | 1874-84 | | (S) W.B. Cleveland |
| Tillotson | | | | | [See Bliss, Tillotson] |
| Tillotson & Co. | 262 Broadway | New York | 1862-65 | General line, Cumming | Keeling a partner. |

[12] See (10)

| MAKER | ADDRESS | CITY | DATES | PRODUCTS | NOTES |
|---|---|---|---|---|---|
| Tillotson, L.G. & Co. | 8 Dey St. | New York | 1865 | Periphery Contact | E.S. Greeley a partner. |
| ...Same... | 26 Dey St. | New York | 1865-67 | key and "Victor" | |
| ...Same... | 11 Dey St. | New York | 1868-72 | Instruments. | |
| ...Same... | 8 Dey St. | New York | 1872-80 | Same, | Bought Gamewell in 1879 |
| ...Same... | 5 & 7 Dey St. | New York | 1880-85 | Same. | (S) E.S. Greeley & Co. |
| U.S. Telegraph & Supply Co. (A) | | Philadelphia | c. 1870 | | |
| Unger | | | | | [See Edison & Unger] |
| Union Electric Co. | | New York | c. 1875 | Keys | |
| Utica Fire Alarm Telegraph Co. | 106-108 Liberty St. | Utica, N.Y. | 1879-88 | General line | "Earthquake" practice set. |
| Vail, Alfred | | | | | [See Speedwell Iron Works] |
| Viaduct Mfg. Co. | Relay Station, B&O RR | Baltimore | 1884 | General line | |
| ...Same... | 4 S. Howard St. | Baltimore | 1894- | Same | |
| Ware, H. | | Cincinnati | c. 1865 | Keys | |
| Watts | | | | | [See Davis & Watts] |
| Watts & Co. | 47 Holliday St. | Baltimore | 1872-78 | | (S) Davis & Watts |
| Welch & Anders | 30 Hanover St. | Boston | 1876 | Printers | (S) Jerome Redding? |
| Wessman, Gustav | 11 Spruce St. | New York | c. 1853 | | |
| Western Electric Mfg Co. | 220 Kinzie St. | Chicago | 1872- | General line | 13 |
| Williams | | | | | [See Hinds & Williams] |
| Williams, Charles Jr. | 109 Court St. | Boston | 1856-72 | General line | (S) Western Electric |
| Woodman | | | | | [See Farmer & Woodman] |
| Zook, Samuel K. | | | | | [See Barnes, Edmund F.] |

[13] "Manufacturing" dropped from title c. 1884.

"General line" products include at least keys, sounders and relays.
(A) May have been an agent only, and probably not an instrument maker.
(V) Verification sought that this firm actually made instruments.
(S) Succeeded by...

Industry Leaders to circa 1890

This is only speculation based on the frequency with which instruments seem to appear in collections, extent of advertising, etc., but the dominant makers in approximate order were:

Bunnell; Western Electric & Tillotson/Greeley, tied; Partrick & Carter; Phelps; Williams; Redding; New Haven Clock Co; Clark, Chester & Chubbuck, tied; Watts, Buell, DuBois, Lyman and Pope not far behind.

In the 1890s Manhattan Electrical Supply Co. was a very large supplier, but Bunnell and Greeley (the "Ludwig" mechanical set) actually may have provided many if not all of their instruments. Some Manhattan catalogs show illustrations of instruments labeled "Bunnell."

Other Notables in Instrument Development

There were many inventors/engineers who contributed substantially to instrument development, such as Milliken, Stearns, Curtiss, Toye and others. They are not listed individually because they apparently did not make instruments other than for patent purposes.

Why Sounders Replaced Registers

"By 1849, operating by sound was becoming prevalent...The reception by register, the constant winding, the mistakes made by copyist caused by imperfect hearing, the whirr of the wheels, the breaking of the weight cord and the howl caused by damaged toes, the delay, the labor of all this was palpable and sought deliverance...It soon became, for all large offices, universal." — James D. Reid, *The Telegraph in America*, pp. 190–191.

## Origins of the Bencher Paddle

*continued from page 31*

### *FYO Single Paddle Revived*

As the iambic paddle became well established, Bencher began to receive requests that they supply a single lever paddle as well; one similar to the original FYO design. Unfortunately, at that time, the FYO patent was still valid and licensed to HAL Communications. Discussions were held with HAL on the subject and, although the HAL people proved cordial and open-minded, no agreement was ever reached. None the less, the requests continued and finally, when the original patent expired, Bencher introduced the ST series of paddles. Though never as popular as the iambic BY series, the ST series of paddles have added to the success of the line.

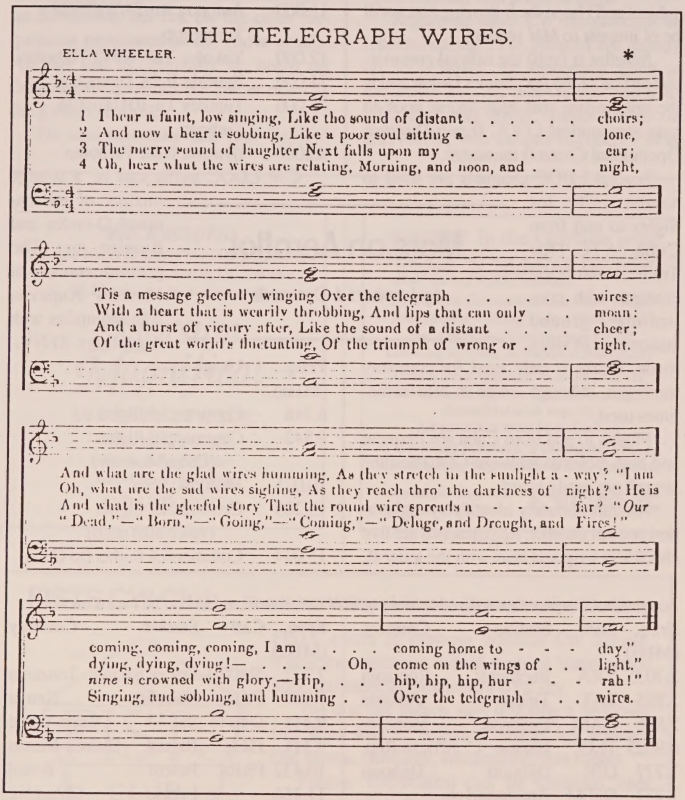
Bencher paddles are now used worldwide, and though competitive information is not available, appear to be the sales leader for paddle type mechanisms. This surely reflects the genius of the original design by Joe Hill W8FYO. Though Joe is a silent key, it would surely give him satisfaction to know how much pleasure the fruit of his work gives to CW operators everywhere.

*© Copyright Bob Locher W9KNI.*
*Reprinted from* FOCUS, *journal of the First Class CW Operators' Club, by kind permission of the author.*

*Morsum Magnificat binders*
*Have you got yours?*
*£5.20 each, all inclusive, to UK or by surface mail to overseas addresses.*
*See MM24, page 34 for full details*

# A Musical Telegraph Memento

**From the *Treasury of Song for the Home Circle*, published in 1882**


THE TELEGRAPH WIRES.
ELLA WHEELER.
*
1 I hear a faint, low singing, Like the sound of distant . . . . . choirs;
2 And now I hear a sobbing, Like a poor soul sitting a - - - - - lone,
3 The merry sound of laughter Next falls upon my . . . . . ear;
4 Oh, hear what the wires are relating, Morning, and noon, and . . . night,
'Tis a message gleefully winging Over the telegraph . . . . . wires:
With a heart that is wearily throbbing, And lips that can only . . moan:
And a burst of victory after, Like the sound of a distant . . . . cheer;
Of the great world's fluctuating, Of the triumph of wrong or . . . right.
And what are the glad wires humming, As they stretch in the sunlight a - way? "I am
Oh, what are the sad wires sighing, As they reach thro' the darkness of night? "He is
And what is the gleeful story That the round wire spreads a - - - far? "*Our*
"Dead,"—"Born,"—"Going,"—"Coming,"—"Deluge, and Drought, and Fires!"
coming, coming, coming, I am . . . . coming home to - - - day."
dying, dying, dying!— . . . . Oh, come on the wings of . . . light."
*nine* is crowned with glory,—Hip, . . . hip, hip, hip, hur - - - rah!"
Singing, and sobbing, and humming . . . Over the telegraph . . . wires.

*Our thanks to Clifford J. Wheeler N1DWA (no relation), of Rockport, MA, for sending MM a copy of this song*

# More on Aeroflot

*by Lambert J. Derenette*

FURTHER TO THE NEWS ITEM 'Aeroflot Still Using CW' in MM18, page 12, I can provide some more information on this subject and I hope the following notes will be of interest to *MM* readers.

Aeroflot is (still) the official commercial airline of the (ex) Soviet Union and is the only airline that uses Morse code to pass aeronautical LDOC (Long Distance Operational Control) messages.

Several LDOC channels are used to handle traffic for flights to and from Cuba. ATC (Air Traffic control) exchanges with controlling ground stations are in voice mode. Morse is only used for company messages, although voice is also sometimes used.

Flights to and from Cuba are frequent and both Boyeros (callsign COL) and the aircraft are easily heard.

Aircraft normally identify by registration and tail number. Registrations are five characters long and start with the letter R. The first two digits of a tail number identify the aircraft type.

| Tail Series | Aircraft Type |
|---|---|
| 11.000 | Antonov An-24/26/30/32 Turboprop |
| 42.000 | Yakolev Yak-40/42 Turbofan |
| 74.000 | Ilyushin Il-18 Turboprop |
| 76.000 | Tupolev Tu-104/Tu-124 Turbojet |
| 86.000 | Ilyushin Il-62 Turbofan |

CW LDOC traffic can be a strange mixture of international Q-codes and Russian text. The ground station at Moscow Kupavna Aero identifies with the callsign RFNV.

| Freq. (MHz) | Usage |
|---|---|
| 6.748 | Commercial flights |
| 8.842 | Commercial flights (Cuba/Moscow) |
| 10.025 | Moscow Aero |
| 13.205 | Commercial flights (voice also used) |
| 15.024 | Commercial flights (to Cuba) |

Some other frequencies where interesting CW communications can be heard are:

| Freq. (MHz) | Call | Station | Country |
|---|---|---|---|
| 2.7035 | YRA | Bucharest | Romania |
| 3.885 | ZAT | Tirana | Albania |
| 3.885 | HAM | Budapest | Hungary |
| 6.9025 | TLO | Bangui | C. African Rep. |
| 7.777 | DJR | Djibouti | Djibouti |
| 7.777 | 5ST44 | Antananarivo | Madagascar |
| 7.777 | 5HD20 | Dar es Salaam | Tanzania |
| 7.777 | 5YD | Nairobi | Kenya |
| 9.111 | D4B44 | Sal | Cape Verde |
| 9.111 | J5G | Bissau | Guinea-Bissau |
| 10.432 | PRR4 | Belem | Brazil |
| 11.166 | | Leticia | Colombia |
| 16.245 | 4XL | Ben Gurion | Israel |

*(Lambert J. Derenette is Editor of* Belgian Military Aircraft Photo File*)*

(*MM* footnote: Tom St. John Coleman, who provided the original report on Aeroflot CW in MM18, reports that he is still logging RFNV calling COL on 15.024MHz, sometimes receiving a reply and sometimes not. He has also heard them on 8.842MHz but not on the other frequencies mentioned in the above article. Aircraft can occasionally be heard on these two frequencies but not as often as the ground stations.

He also mentions that Bob Groves' *SW Directory* lists further Aeroflot CW frequencies as 11.312, 11.348, and 17.936MHz; Klingenfuss, 7th edition, adds 7.848; and *Monitoring Times* gives RFNV METAR transmissions in CW as 11.359 by day and 6.685 at night.

Regarding other CW frequencies, he reports hearing 5YD, Nairobi Air, faintly on 16.245MHz, the frequency given in the article for 4XL Ben Gurion. Just audible, also, was BMB, Taipei Meteo on 8.117MHz, with weather in code.) *MM*


*BACK ISSUES*

Limited stocks of Issues Nos. 19–24 are still available, price £2.20 each to UK addresses, £2.25 overseas by surface mail

*Morsum Magnificat*

*IN THE NEXT ISSUE:*

Who Buzzed First?
On Learning Morse
Indo-China Memories
AND LOTS MORE!

RADIO BYGONES In the Oct/Nov issue out now!

*Commando Communications – No. 46 Set*
*The Unidyne – Using Valves Without HT*
*Evaluating the Scott-Taggart S.T.68*
*Listening to Home & Overseas Broadcasts*

Annual subscription (6 issues) £17 to UK addresses, £18 overseas by surface mail.
Airmail rates on request.
All payments must be in Sterling

**G C Arnold Partners, 9 Wetherby Close, Broadstone, Dorset BH18 8JB, England**

*For a sample copy, send £3.00 or a US$5 bill*

**FISTS CW Club – The International Morse Preservation Society**

C W FISTS CLUB

FISTS exists to promote amateur CW activity. It welcomes members with all levels of Morse proficiency, and especially newcomers to the key.

The club has awards, nets (including a beginners' net), dial-a-sked for beginners, straight key activities, QSL bureau, newsletter, and discounts from traders.

Further information can be obtained from **Geo. Longden G3ZQS, 119 Cemetery Road, Darwen, Lancs BB3 2LZ.** Send an s.a.e. or two IRCs.

# Your Letters

*We have received several letters covering more than one of the subjects mentioned in MM24. In order to bring the comments on various matters together, these letters have been split into single subjects as far as possible. Despite the impression given, this does not mean that some correspondents have written more than one letter.*

### Abbreviations and Procedures – 1

I should like to reply to G0HHL's comments on abbreviations and procedures employed in the UK Novice Morse test (MM24), with reference to the examples given in MM21.

A candidate taking the Morse test is highly charged with nervous tension; for this reason, far from being inconsistent, the QSO format Novice test has been designed specifically to help the candidate understand the status of the QSO by using standard procedural signals.

The reason that the first QSO example begins with $\overline{CT}$ is quite simply because this is the RECEIVING part of the test, sent by the examiner to the candidate, and the symbol is used in its correct context by warning the receiving station that the actual text will commence immediately afterwards. It is not part of the test and is not marked. Other countries use symbols such as VVV or II II to precede the test passage. We prefer the 'commencement of work' symbol.

The second QSO example is the SENDING part of the test, and as the candidate and the examiner have the written text in front of them there is no need for a 'stand-by' signal to be sent by the candidate.

It may seem old-fashioned, but I consider it common courtesy by the sender to indicate to the receiving station the end of the message (QSO) by using the $\overline{AR}$ symbol, also in its correct place, before the callsigns at the end of an over. Used in the Morse test it will indicate to the candidate that the closing calls will follow.

Regarding QSA and QRK, I would agree that in the amateur service RST is perfectly adequate for signal reports, and on the face of it QSA and QRK would appear to be unnecessary duplication. However, one of the prime reasons for requiring proficiency in Morse code before being permitted access to the HF bands is so that operators can understand a request to QRT or QSY from a shared user of the band. Unless the operator of another service is also a licensed amateur the first attempt at contact would very likely be (callsigns) QSA? or QRK?

Is there such a thing as a definitive QSO as used in the amateur service? One could argue all day about this. I would suggest that procedures used on the air depend a great deal on the experience and location of the sender. As an example, a simple word such as TKS used in Europe becomes TNX in the USA.

Just as language develops with time, with words disappearing from use and new ones introduced, so does the use of

CW procedures on the air. Books of typical QSOs written a decade ago will appear to be out of date. Depending on your background, the error signal can be sent as eight dots, II, $\overline{VE}$, or $\overline{IMI}$.

The UK Morse test should no longer be viewed in isolation. It is now part of a structured learning process. The list of Q-codes, procedural signals and abbreviations that can be used in the test are contained in the Novice Licence syllabus and are explained in detail during the course with the aim of ensuring that the newcomer is familiar with the basic framework of a Morse QSO on the amateur bands from an early stage.

The conversion of the 12 wpm Morse test to the QSO format from 1 January 1993 now continues that process. The coming year will see a revolution in Morse instruction in the UK. For the first time candidates will know how to communicate on the air before receiving their certificate.

*Roy Clayton G4SSH,*
*RSGB Chief Morse Examiner,*
*Scarborough, North Yorkshire*

### Abbreviations and Procedures – 2

With reference to the comments by Philip Scrivens, G0HHL, on the use of $\overline{IMI}$ for 'I say again', I was a little puzzled by its use during my first couple of QSOs with W's but soon worked out from the context what it meant. Up to now I haven't had any problem in understanding the difference between $\overline{IMI}$ meaning '?' or 'I repeat'. Personally I use 'II' for 'repeat', having picked it up from QSO's with PCH-amateurs, and of course this is much shorter than $\overline{IMI}$.

QRK/QSA is another tradition from Morse professionals which shouldn't be allowed to die out. These reports are still used by some ex-professionals and I have a copy of the report scale, taken from the *MM Q & Z Codebook*, on my shack wall so that I can respond properly when I receive such reports.

Regarding $\overline{AR}$, I find it very helpful when this is sent before the callsigns at the end of an over because when I hear the $\overline{AR}$ I know that only callsigns will follow and I can use those few seconds looking through my notes before $\overline{KN}$ is received.

When calling CQ, the $\overline{AR}$ after the callsign indicates 'fetch your key, I'm going to listen' so in my opinion $\overline{AR}$ can be used both before and after the callsign according to the circumstances. I must admit I don't know what the correct method is but I do find the above most useful.

When looking through my *Q & Z Codebook* I think that already too many useful codes have been lost to amateur traffic, such as QSZ which would be helpful in difficult conditions (send each word or group twice or ... times). Now it seems we are having to reduce even the few that are left.

A good example in another direction is the use of 'C' (yes) which is rarely heard today. When you are in QSO and another station comes up with QRL? (is this frequency in use?) why not answer 'C' instead of 'yes' or 'yes pse QSY'? Using the latter you will miss several words from your contact but with 'C' virtually nothing will be lost – assuming that the enquiring station knows what 'C' means! Even if not, it is fairly easy to guess its meaning and I have success with it most of the time.

The Q & Z book is beside my

transmitter to help cope with unexpected situations which, with the exception of QRK/QSA, have not yet shown up. It seems that the ex-professionals have adapted to the lesser code-knowledge of ordinary leisure time amateurs.

It is very nice to hear the new G-novices on 80m, using and understanding their 'CW language'. This is because they are taught procedures and abbreviations during their training. Here in Holland you must learn it all for yourself. Many PA beginners know RST QTH and 73 only, with everything else in full text, and when I work them I adapt to their style, to encourage them and to demonstrate that their CW really is readable, which is their biggest concern.

*Monika Pouw-Arnold PA3FBF, Mijdrecht, Holland*

### Abbreviations and Procedures – 3

In response to Philip Scrivens' article, amateur procedure is generally in a mess. Nearly everyone I work has his own way of abbreviating, coding and so on. Until you get to know an operator from a few QSOs with him you just have to muddle along.

It would be nice if the world's operators could agree on a basic system, but no doubt until Hell freezes we shall be stuck with a great many more than 57 varieties. You could be philosophical and say 'Well, it's all part of life's pattern!'

*John Worthington GW3COI, Abersoch, Wales*

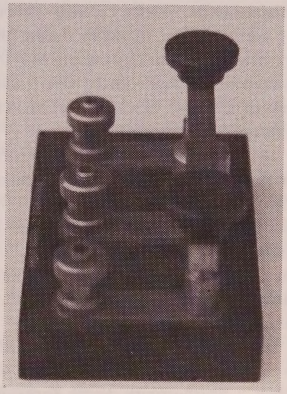
### Lorenz-style Key

I am informed by G3KXU that the Lorenz style key issued from REME stores Donnington as part No ZA 54574 (MM23, p.44) was part of the reparations from Germany after WWII, and that there were two types, identified by different knobs, one army and one navy.

*Dennis Goacher G3LLZ, Swindon*

### Double-ended Key – 1

With reference to the double-ended key described by John Gilbert (MM24, p.44),



is the item shown in the above photograph the same thing or not? I have no information on it except that it has printed on the base 'Philip Harris Ltd, Birmingham'. Does any reader know exactly what this is?

*Maurice Small G0HJC, Chinnor, Oxfordshire*

### Double-ended Key – 2

Could the double key sketched by John Gilbert have been a learner's key? Two learners sitting opposite one another at a table could thus share the same key.

Furthermore, if each one watched the other's sending hand closely they could converse without a sounder (or without a buzzer).

Have I invented something?

*John V. Hicks, D.Litt.,*
*Saskatchewan, Canada*

### Double-ended Key - 3

Regarding the double-ended key shown by John Gilbert, may I suggest this could have been used between two learner operators at opposite sides of a table?

*John Worthington GW3COI,*
*Abersoch, Wales*

### What Makes a Good Key?

For many years I have sought the ideal straight key, one that sends effortless perfect CW at 30 wpm plus. So far, needless to say, I have failed to find such a device. However, in my quest I have acquired a few straight keys (collection is too grand a word) and an enigma.

My keys include such famous marques as Junker, Kent, Marconi, and the RAF Type D. When using a particular key, for a few weeks all is well and I love it. I wonder why I spent good money buying all the other keys. Then, suddenly, I hate it. What possessed me to spend good money on such a load of rubbish? I search in the cupboard and one of the other keys is now placed on the table while the poor performer goes back where it came from.

For a few weeks all is well. I love this key, then... Yes, the cycle repeats itself. A number of questions arise. Am I alone in having such a relationship with my Morse keys? Why do I feel this way? What is it that makes a good key?

Apart from correct adjustment and mounting, there are obviously mechanical characteristics such as freedom of movement. However, there appears to be something else. There is some characteristic which is impossible to define, but which one instinctively knows when it is present.

I have tried to analyse the mechanics of a key. Gap and tension are easy to understand. The inertia and flexibility of the arm, and the vibrations induced in the base by the force of the closing contacts, are beyond my analytical skills. Does a key have a natural resonant frequency which makes it ideal for use at one speed?

Over the years, the photographs of Morse keys appearing in *MM* have given me great pleasure. What has amazed me is the wide variety of design. Perhaps this means that no-one has ever made the ideal key and my quest has about as much chance of success as finding the end of a rainbow. However, if it does exist I would dearly like to try it – and I am QTHR!

*Gerald Stancey G3MCK,*
*Staines, Middlesex*

### Unknown Key – 1

The 'unknown' key from G3LLZ on page 24 of MM24 is a GPO single current type F17 key. The cast base is not copper but copper-plated. I used one of these for a long time when working /M CW. It handles well.

*John Short G3BEX,*
*Seer Green, Buckinghamshire*

### Unknown Key - 2

In the mid/late 1960s, on one occasion, I helped to run a W/T broadcast from the

wireless station housed in South West Tower, Admiralty, the station of Admiral Commanding Reserves.

In front of me was a GNT (Morse Auto) with traffic tape running through it into a waste bin. To the right was an Admiralty Pattern slide switch marked 'Send/Receive'. This switched from auto send to hand key sending, and the key alongside the switch was the same as the 'unknown' key from G3LLZ on page 24 of MM24.

I recognised it immediately; a few years later I had two of these keys but eventually passed them on to friends in need of a key to start in amateur radio. I remember that both keys were clearly embossed with an Admiralty Pattern No on the rear of the base frame. I shall be interested to see if other identities are offered.

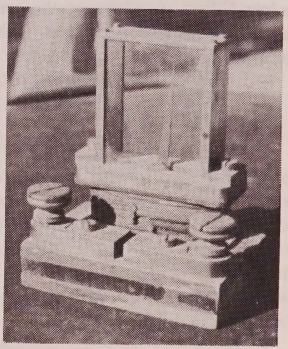
*Brian Payne G4CJY,*
*High Wycombe, Bucks*

## Oldest Working Galvanometer?

Situated in the old telegraph station at Alice Springs in the Northern Territory of Australia is a small, very old, galvanometer wired into the Canberra 'landline' circuit which is activated by the Morsecodians Fraternity annually, and on other occasions, as reported in *MM* from time to time.

This instrument was on the table at Alice when we first connected up the line in 1989. It sprang into life immediately and hasn't missed a beat since. I have seen photographs of the operating table in the early 1920s but they were then using the conventional cathedral type galvos. This is obviously an earlier type and there is a possibility that until we put it into circuit it hadn't worked for over a 100 years!

I believe it to be a portable galvanometer used for testing during the construction of the overland telegraph line, erected in 1870–72 to cross Australia from North to South. In this case it could have been made in the mid to late 1860s, probably in the UK although, unfortunately, there is no maker's name or manufacturing date on it.



*Early galvanometer, now installed in working order in the old telegraph station at Alice Srings*

Some of the equipment used by Charles Todd, the planner of the line, is known to have ended up in Alice Springs and this gives rise to my suspicion that this galvanometer may have been used by Todd as a portable unit when testing sections of the line during the course of construction. Tending to confirm the assumption of portable use is the absence of any mounting holes or brackets to fix it in a permanent operating position.

I should like to issue a challenge to any reader of *MM* to come up with a work-

ing electrical meter older than this one appears to be.

***John Houlder,***
***Charnwood, ACT, Australia***

*(Will any reader responding to this challenge send details, preferably with photograph, to T.S. please. Any testing instrument likely to have been used in a telegraph circuit will qualify. Alternatively, can anyone definitely identify the instrument described by John Houlder? – Ed.)*

## Morse Learning

With reference to the interesting article on Morse learning methods ('Why Farnsworth', MM24, p.36) my copy of the 'Wireless World' booklet mentioned is the 4th (revised) edition, undated but advertised in the January and March 1941 issues of *Wireless World*.

The general context is as quoted in *MM* from the 13th (1961) edition, but the suggested learning rate (with exaggerated spacing between letters and words) is 15–20 wpm compared with 12–18 wpm in the later version.

This booklet must have been a hot best-seller. The 5th edition was advertised in the May 1941 *WW*, followed only a month later by the 6th edition in the June issue!

***John Goldberg G3ETH, Chester***

## More Media CW – 1

I can add to the list of CW media-items mentioned in 'Your Letters', MM24, p.43. First, 'Zeitzeichen' is a daily radio transmission on WDR 2 (Westdeutscher Rundfunk channel 2; try MW 720kHz), at 0805 GMT winter and 0705 summer, which commemorates notable anniversaries from the past.

The signature tune of this programme includes the title 'Zeitzeichen' in Morse (CW-tone) at about 20 wpm. It was very regrettable however, that on 27 April 1991 the programme made no mention of the 200th anniversary of Prof. Morse's birth or his famous invention despite the fact that it had made use of his signals for the last 20 years!

QAM is transmitted in CW-tone by ARD (1st channel German public TV-network) at about 18 wpm after (not before!) the weather forecasts which follow the news bulletins. This signal first appeared about 1967 and has survived every 'face-lift' of this station until now.

'Heute' (Today) is the title of the news broadcasts from ZDF (2nd channel German public TV-network). By looking at the clock on the screen before each programme it can be seen/heard that 'heute' is transmitted in Morse by synthesiser-sound in the last three seconds of the count-down, at precisely 20 wpm.

This was badly sent for the first few years and I remember a letter in the TV-guide from a DARC official asking for this to be rectified, which it subsequently was. ZDF has also had a 'face-lift' recently to compete with the commercial/satellite stations but it has retained 'heute' in Morse, albeit with a different synthesiser-tone.

A commercial on Dutch TV (channels NL1,2,3, and RTL4) by the AEGON insurance company shows a ship in bad weather at sea while a CW advertising message is sent at about 35 wpm. The message is simultaneously printed on screen as it is received and also read out by a speaker-off so it is not possible to assess the accuracy of the transmitted CW.

For those who don't know Morse, however, it presents an attractive picture of what Morse telegraphy is!

An earlier advertisement by the same company featured faint CW at about 18 wpm with pictures relating to post-WWII politics. Again the voice-over made copying impossible except for one or two letters and, surprise, surprise, the name of the company!

*Monika Pouw-Arnold PA3FBF, Mijdrecht, Holland*

### More Media CW – 2

G3JUL informs me that the German TV station SAT 3 sends 'Heute' (Today) in Morse five seconds before the news bulletin starts at 1800A.

*Gerald Stancey G3MCK, Staines, Middlesex*

### Double Needle Speed

Concerning the reading of the movements of two needles at 40 wpm, as mentioned in G4IYB's letter (MM24, p.43), may I express doubt at this claim?

While at Compton Bassett, we all had Morse lamp instruction courses and were told that greater speeds than 8/10 wpm were impossible due to 'persistence of vision', i.e. the flashing above those speeds merges into a steady light.

This principle would no doubt apply to moving needles being read in normal light.

*John Worthington GW3COI, Abersoch, Wales*

### CW Etiquette – 1

Gerald Stancey G3MCK raises the question of responses to CQs sent at a given speed (MM24, p.42). As far as I am concerned, my message to listening stations is 'I want a QSO preferably at this speed but if you reply either faster or slower you will get a reply from me at the same speed.'

This technique was taught at the Compton Bassett RAF Operators' School, not in relation to CQs of course but when making periodic test transmissions for other stations or aircraft.

The implication from the CQ originator is that a faster reply will be treated politely, but it is really bad form to call someone faster than he is sending (unless, of course, he is an old CW friend). Further, if the reply is slower than the CQ, the polite thing is for the replying station to send 'QRS pse'.

There are many times when activity on the bands is poor, when even a 'rubber stamp' is happily accepted by tyros and OTs alike, so it behoves all CQers to accommodate the social gaffes of others with good grace.

Be it noted that I write as one whose patience is often paper thin, but I have an automatic QSO available from a small unit which satisfies both ends of a QSO on occasion!

*John Worthington GW3COI, Abersoch, Wales*

### CW Etiquette – 2

In response to Gerald Stancey's letter, if the VK/YU situation he mentions occurred, I would call 2 x the desired country (VK) and if there is no reply (perhaps the band is closed or maybe there is no interest in working a PA) I would take the YU. Maybe he/she has been lucky to hear me on a home-brew rig/antenna. Perhaps he is after an award or I am being called for some other reason which may be of inter-

est to me also. This may not be very likely but I will never know if I ignore the call. In any case, a standard QSO may only take a few minutes and I would be providing the YU with some pleasure by my response!

Regarding speed, if not wanting to work below a desired speed, why not call 'CQ 25 wpm', like 'CQ QRQ' or 'CQ QSK' which can be heard on the bands regularly? 'CQ 25' not followed by 'wpm' could be misunderstood as looking for a crossband QSO.

*Monika Pouw-Arnold PA3FBF, Mijdrecht, Holland*

### CW Etiquette – 3

Replying to Gerald Stancey, I take the view that slowing down to the other guy's speed is common courtesy. If he is seeking practice at higher speeds then it is surely within his capability to send 'OK QRQ OM = NEED THE PRACTICE'.

I see nothing wrong with a slower operator calling someone who is CQ at a higher speed if the CQer is not specifying QRQ. We all have to start somewhere and to ignore a slower station would be an act of gross discourtesy. Speaking for myself and, I am sure, just about every member of FISTS CW Club, I would rather slow down to 12 wpm than drive the QRS station over to the Donald Duck mode.

I rarely use selective CQs. The exception is CQ USA/FISTS, but when using the FISTS club call, GX0IPX, I can well understand that some EU stations may be anxious to log what is perhaps their first GX call and in this case I am perhaps more tolerant than I would otherwise be. Calling selectively under my own call I would assuredly ignore any station other than the target, otherwise what is the point of making a selective call?

Calling CQ DX, however, is a little silly. To a Ukrainian QRP station you may well represent DX if he has never got this far before on his one watt and base-loaded screwdriver. It is better to be specific, e.g., CQ ASIA; CQ PACIFIC; CQ WIGAN, etc.

*Geo Longden G3ZQS, Secretary, FISTS CW Club, Darwen, Lancs*

### Natural Break

I recently heard of a Q-code special to Iceland. This is QKA and it is used by an operator when he or she needs a break to go to the loo. There was apparently much head-scratching in the UK recently when this code was used in a TF-G QSO! Those familiar with Icelandic read this as Q-KA. Others would pronounce it 'coo-kah'.

*Reynir H. Stefansson, Reydarfirdi, Iceland*

*(According to the* MM Q/Z Codebook, *QKA has not been allocated. Other codes that have been used for this particular message include Q4P (MM11, p.16) and QAU (I am about to jettison fuel). Are there any more? – Ed.)*

## Bookshelf

*Due to pressure on space in this issue, we are unable to include the usual 'Bookshelf' page.*
*The titles listed on page 10 of MM24 are still available as we go to press, although 'Radio Art' and 'RA Postcards' are becoming in short supply and the position on further stocks is uncertain*

# Morsum Magnificat

## Index to Issues Nos 21 – 24 (Autumn 1991 – Summer 1992)


| SUBJECT/TITLE | AUTHOR/ORIGIN (*C = inside back cover) | Iss. | Page* |
|---|---|---|---|
| **ACTIVITIES/EVENTS** | | | |
| AGCW-DL HOT Party | *AGCW-DL* | 21 | 6 |
| Czech paras commemoration | *OK1HR* | 24 | 8 |
| CW Morse Day at Locust Grove | *Poughkeepsie ARC* | 23 | 3 |
| Europe for QRP 1992 | *G & OK QRP Clubs* | 24 | 3 |
| Europe for QRP success | *G & OK QRP Clubs* | 23 | 2 |
| FOC Late Summer CW QSO Party | *FOC* | 24 | 4 |
| Nottingham Morse seminar 1993 | *R. Wilson* | 24 | 6 |
| Russian QRP Contest | *U QRP Club* | 24 | 4 |
| UCWC contest 1992 | *UCWC* | 24 | 6 |
| World QRP Day | *IARU* | 23 | 2 |
| **AIR FORCE** | | | |
| Burton and Spark (ltr) | *Ray Redwood* | 22 | 45 |
| Gone for a Burton (ltr) | *J. Pemberton* | 21 | 39 |
| **AMATEUR RADIO** | | | |
| 72 signal | *G-QRP Club* | 21 | 4 |
| Award, 3A-CW | *C. Passet* | 21 | 4 |
| Award, BINGO! | *RSGB* | 22 | 5 |
| Award, CQ WAZ – CW | *CQ magazine* | 21 | 4 |
| Award, UCWC | *V. Stepanenko* | 21 | 5 |
| Award, UCW Morse | *V. Stepanenko* | 21 | 5 |
| Bug User Group (ltr) | *J.H. Nohns* | 23 | 46 |
| CW in Russia (ltr) | *A. Troubachov* | 23 | 45 |
| CW news bulletins | *MM* | 21 | 6 |
| Duxford RS re-inaugurated | *Duxford RS* | 23 | 4 |
| DX Pile-ups, another approach | *J. Hanson* | 21 | 8 |
| EUCW still growing | *EUCW* | 21 | 4 |
| First EUCW Award | *EUCW* | 22 | 2 |
| Higher speed exams in Australia | *Amat. Radio* | 21 | 4 |
| HST Championship results | *IARU Region 1* | 22 | 4 |
| Laser records on CW | *CQ magazine* | 21 | 2 |
| Low power Dxing | *C. Austin* | 21 | 32 |
| Microwave records on CW | *W5YI Report* | 21 | 2 |
| More EUCW members | *EUCW* | 22 | 3 |
| Morse Day at Locust Grove | *Poughkeepsie ARC* | 23 | 3 |
| MORSE QSL cards delayed | *MM* | 22 | 3 |
| Morse QSLs | *Various* | 24 | C |
| My days as an Amateur Morse Examiner | *B. Faulkner* | 23 | 38 |
| New UK Novice Morse test | *R. Clayton* | 21 | 28 |
| RNARS QRQ transmissions | *RNARS* | 23 | 3 |
| Trophy, KW | *RadCom* | 21 | 4 |
| UCWC Award | *UCWC* | 24 | 7 |
| **ARMY** | | | |
| Fiendish instrument, A (ltr) | *J. Simpson* | 21 | 41 |
| On a wing and a prayer | *Maj. Bob Smith* | 22 | 34 |
| Radio & Rly Morse in Canada | *M. Lynn* | 24 | 30 |
| **BIOGRAPHICAL** | | | |
| Alfred Vail, another view | *J.D. Reid (1895)* | 24 | 35 |
| Alfred Vail's magnetic friendship with Morse – 2 | *Historic Speedwell* | 21 | 10 |
| **CIVIL AVIATION** | | | |
| Comet key (ltr) | *R. Wilson* | 21 | 41 |
| **CLANDESTINE/SPECIAL OPERATIONS** | | | |
| Clandestine Radio, Part 1 | *P. Hawker* | 22 | 6 |
| Clandestine Radio, Part 2 | *P. Hawker* | 23 | 6 |
| **CLUBS** | | | |
| Profile 3 – FISTS CW Club | *FISTS* | 21 | 26 |
| Profile 4 – UFT, France | *UFT* | 22 | 12 |
| Profile 5 – The G-QRP Club | *G-QRP Club* | 23 | 12 |
| **EARLY WIRELESS** | | | |
| Arc signals | *Q & A 1924* | 21 | 35 |
| Airborne tx plate (ltr) | *N. Burton* | 21 | 43 |
| Early German wireless (ltr) | *N. Burton* | 23 | 42 |
| Isle of Wight (ltr) | *J. St. Leger* | 24 | 48 |
| Marconi and the Isle of Wight | *R.F. Pocock* | 23 | 26 |
| You can't miss a Spark (ltr) | *N. Burton* | 21 | 44 |
| **HIGH SPEED TELEGRAPHY** | | | |
| HST Championship results | *IARU Region 1* | 22 | 4 |
| RNARS QRQ transmissions | *RNARS* | 23 | 3 |
| **INDEX** | | | |
| Index for issues 17–20 | *MM* | 21 | 46 |
| **ILLUSTRATIONS** | | | |
| Guessing on the mirror circuit | *E.T. Co 1879* | 24 | BC |
| Siemens' relay | *Culley, 1878* | 21 | C |
| **INSTRUMENTS, HISTORICAL** | | | |
| Restoring! a Morse sounder | *D. Goacher* | 21 | 20 |
| Omnigraph, The | *T. Smith* | 22 | 28 |
| **KEY MAKERS** | | | |
| American telegraph instrument makers, 1837-1900, Pt 1 | *R.W. Reinke* | 23 | 16 |
| American telegraph instrument makers, 1837-1900, Pt 2 | *R.W. Reinke* | 24 | 16 |
| **KEYS** | | | |
| A1A available to MM readers | *C. Passet* | 24 | 6 |
| Admiralty pattern key (ltr) | *J. Lycett* | 21 | 40 |
| Baby Morse key | *G4ZPY Keys* | 24 | 7 |
| Bunnell's Last Catalog (book review) | *T. Smith* | 23 | 22 |
| Comet key (ltr) | *R. Wilson* | 21 | 41 |
| Cover key Japanese (ltr) | *D. Couch* | 23 | 41 |
| Double-ended key (ltr) | *J. Gilbert* | 24 | 44 |
| Fair exchange (Willis key)(ltr) | *Simpson* | 21 | 43 |
| Happy re-union (mast head light key) (ltr) | *A. Milne* | 22 | 46 |
| Japanese key (ltr) | *H. Miller* | 24 | 42 |
| Key identification (ltr) | *C. Passet* | 24 | 44 |
| L.E.M. key (ltr) | *G.F. Armstrong* | 24 | 46 |
| Lorenz style key UK ref! (ltr) | *J. Lycett* | 23 | 44 |
| Mac-Key Blue Book (review) | *T. Smith* | 24 | 19 |

| | | | |
|---|---|---|---|
| Magic key (ltr) | *S. Casperd* | 22 | 47 |
| Mini-MM Key-Meet (ltr) | *J. Lycett* | 23 | 41 |
| Moby Dick (key for US TBX set) (ltr) | *H. Miller* | 22 | 44 |
| More on Moby Dick | *H. Miller* | 24 | 20 |
| NATO Navy key (ltr) | *B. Payne* | 23 | 42 |
| New hand key (L.E.M.) | *L.E.M.* | 23 | 5 |
| New Samson keyer, ETM-9C | *Frank H. Watts* | 24 | 5 |
| Omnigraph, The | *T. Smith* | 22 | 28 |
| Pump, pipe or pickaxe? (ltr) | *D. Bourcart* | 24 | 47 |
| Showcase, photos, | *Various* | 21 | 24 |
| Showcase, photos | *Various* | 23 | 24 |
| Showcase, photos | *Various* | 24 | 24 |
| The ubiquitous Key WT 8 Amp | *J. Lycett* | 22 | 22 |
| Three keys from Canterbury | *T. Smith* | 21 | 17 |
| Unofficial record (ltr) | *J. Houlder* | 21 | 42 |
| We had them too (bug fttg)(ltr) | *G. Brown* | 21 | 43 |
| What key was it? (ltr) | *R. Whitaker* | 24 | 47 |

**LEARNING MORSE**

| | | | |
|---|---|---|---|
| Burton and Spark (ltr) | *Ray Redwood* | 22 | 45 |
| Gone for a Burton (ltr) | *J. Pemberton* | 21 | 39 |
| Learning to send (ltr) | *G. Brown* | 23 | 47 |
| Trial period (Morse class) (ltr) | *I. Sharkey* | 23 | 45 |
| Why Farnsworth? | *T. Smith* | 24 | 36 |

**LINE TELEGRAPHY**

| | | | |
|---|---|---|---|
| Airborne earth | *L. Moreau* | 21 | 35 |
| Alfred Vail, another view | *J.D. Reid (1895)* | 24 | 35 |
| Alfred Vail's magnetic friendship with Morse - 2 | *Historic Speedwell* | 21 | 10 |
| Fiendish instrument, A (ltr) | *J. Simpson* | 21 | 41 |
| Morsecodians at Alice Springs | *J. Houlder* | 24 | 2 |
| Radio & Rly Morse in Canada | *M. Lynn* | 24 | 30 |
| Restoring a Morse Sounder | *D. Goacher* | 21 | 20 |
| Single needle on the LNER – 1 | *LNER* | 23 | 32 |
| Single needle on the LNER – 2 | *LNER* | 24 | 11 |
| Sydney Morsecodians celebs | *J. Houlder* | 21 | 3 |
| Thin Red Lines, The (review) | *Cable & Wireless* | 24 | 26 |
| Using the double needle (ltr) | *B. Guest* | 24 | 43 |
| The first sound reader? | *T.S.* | 21 | 36 |

**MARITIME**

| | | | |
|---|---|---|---|
| GMDSS comes nearer | *W5YI Report* | 21 | 2 |
| Obey the rules! | *'Ex Sparks'* | 23 | 15 |

**MISCELLANEOUS**

| | | | |
|---|---|---|---|
| Ancient ciphers (ltr) | *C.P.Krause* | 22 | 43 |
| Dental Morse prank (ltr) | *J. Mathisrud* | 24 | 46 |
| Media CW (ltr) | *C. Passet* | 24 | 43 |
| Morse QSLs | *Various* | 24 | C |
| New application for Morse | *G. Arnold* | 24 | 9 |
| Telegraph grade abolished | *B. Telecom* | 23 | 2 |

**MORSE, S.F.B.**

| | | | |
|---|---|---|---|
| Latin connection? (ltr) | *Rev. D. Leak* | 21 | 45 |
| Morse-Viking link? (ltr) | *J.H. Nohns* | 21 | 44 |

**MUSEUMS**

| | | | |
|---|---|---|---|
| Duxford RS re-inaugurated | *Duxford RS* | 23 | 4 |
| Scottish Museum of Communication | *C.H.C. Matthews* | 21 | 6 |

**NAVY**

| | | | |
|---|---|---|---|
| Admiralty pattern key (ltr) | *J. Lycett* | 21 | 40 |
| Battle of Jutland (ltr) | *P. Hawker* | 24 | 45 |
| Kyushu, Snake & Dai Death | *W. Davis (ltr)* | 21 | 44 |
| Moby Dick (key for US TBX set) (ltr) | *H. Miller* | 22 | 44 |
| More on Moby Dick | *H. Miller* | 24 | 20 |

**OPERATING, GENERAL**

| | | | |
|---|---|---|---|
| 72 signal | *G-QRP Club* | 21 | 4 |
| Abbreviations & procedures | *Various* | 22 | 32 |
| Bug User Group (ltr) | *J.H. Nohns* | 23 | 46 |
| CW etiquette (ltr) | *G. Stancey* | 24 | 42 |
| End of message (AR) (ltr) | *F. Roddy* | 22 | 46 |
| If its T6, say so! (ltr) | *A. Troubachov* | 24 | 44 |
| INT, Opposite of (ltr) | *G. Brown* | 21 | 41 |
| More on abbrs & procs | *P. Scrivens* | 24 | 32 |
| Std Freq & Time signal stations of the world (booklet) | *ISWL* | 23 | 2 |
| What is it? | *G. Arnold* | 24 | 47 |
| What was he doing (ltr) | *O. Roeckner* | 22 | 47 |

**OPERATING SKILLS**

| | | | |
|---|---|---|---|
| DX Pile-ups, another approach | *J. Hanson* | 21 | 8 |
| Laser records on CW | *CQ magazine* | 21 | 2 |
| Low power DXing | *C. Austin* | 21 | 32 |
| Microwave records on CW | *W5YI Report* | 21 | 2 |
| Perfect not necessarily best (ltr) | *G. Brown* | 22 | 43 |
| RNARS QRQ transmissions | *RNARS* | 23 | 3 |

**POEMS**

| | | | |
|---|---|---|---|
| Ode to a Wireless Operator | *H. Pearson (1905)* | 24 | 48 |

**RAILWAYS**

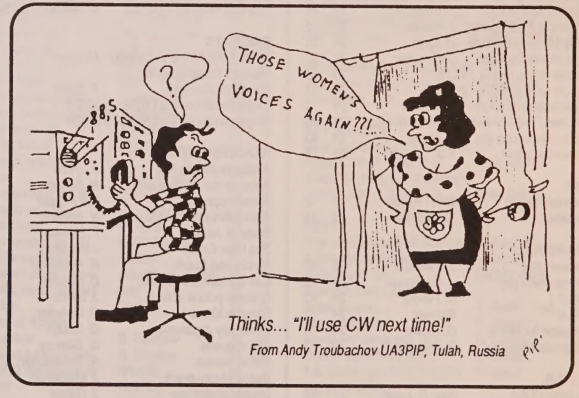
| | | | |
|---|---|---|---|
| Radio & Rly Morse in Canada | *M. Lynn* | 24 | 30 |
| Railroad Telegrapher's Handbook (review) | *T. Smith* | 22 | 16 |
| Single needle on the LNER – 1 | *LNER* | 23 | 32 |
| Single needle on the LNER – 2 | *LNER* | 24 | 11 |

**READERS' LETTERS**

| | | | |
|---|---|---|---|
| Admiralty pattern key | *J. Lycett* | 21 | 40 |
| Airborne transmitting plate | *N. Burton* | 21 | 43 |
| Ancient ciphers | *C.P.Krause* | 22 | 43 |
| Anecdotes and Info please! | *N. Ackland* | 22 | 43 |
| Battle of Jutland | *P. Hawker* | 24 | 45 |
| Bug User Group | *J.H. Nohns* | 23 | 46 |
| Burton and Spark | *R. Redwood* | 22 | 45 |
| Call the Novices please | *D. Gosling* | 23 | 43 |
| Chinese puzzle solved | *J. Sykes* | 23 | 43 |
| Chinese Morse | *D. Goacher* | 24 | 42 |
| Cover key Japanese | *D. Couch* | 23 | 41 |
| CW etiquette | *G. Stancey* | 24 | 42 |
| CW in Russia | *A. Troubachov* | 23 | 45 |
| Dental Morse prank | *J. Mathisrud* | 24 | 46 |
| Double-ended key | *J. Gilbert* | 24 | 44 |
| Early German wireless | *N. Burton* | 23 | 42 |
| End of message | *F. Roddy* | 22 | 46 |
| Fair exchange (Willis key) | *J. Simpson* | 21 | 43 |
| Fiendish instrument, A | *J. Simpson* | 21 | 41 |
| Gone for a Burton | *J. Pemberton* | 21 | 39 |
| Good selection on SKD | *J. Walder-Davis* | 22 | 44 |

| | | | |
|---|---|---|---|
| Happy re-union | *A. Milne* | 22 | 45 |
| How did they read a sounder? | *D. Hooper* | 22 | 45 |
| If it's T6, say so! | *A. Troubachov* | 24 | 44 |
| INT, Opposite of | *G. Brown* | 21 | 41 |
| Isle of Wight | *J. St. Leger* | 24 | 48 |
| Japanese key | *H. Miller* | 24 | 42 |
| Key identification | *C. Passet* | 24 | 44 |
| Kyushu, Snake & Dai Death | *W. Davis* | 21 | 44 |
| Latin connection? | *Rev. D. Leak* | 21 | 45 |
| Learning to send | *G. Brown* | 23 | 47 |
| L.E.M. key | *G.F. Armstrong* | 24 | 46 |
| Lorenz style key - British ref! | *J. Lycett* | 23 | 44 |
| Magic key, The | *S. Casperd* | 22 | 47 |
| Media CW | *C. Passet* | 24 | 43 |
| Mini-MM Key-Meet | *J. Lycett* | 23 | 41 |
| Moby Dick | *H. Miller* | 22 | 44 |
| Morse-Viking link? | *J.H. Nohns* | 21 | 44 |
| NATO Navy key | *B. Payne* | 23 | 42 |
| Perfect not necessarily best | *G. Brown* | 22 | 43 |
| Pump, pipe or pickaxe? | *D. Bourcart* | 24 | 47 |
| Readers' ADS work world-wide | *D. Couch* | 23 | 43 |
| Scouting days | *T. Jones* | 21 | 42 |
| Specialised knobs | *D. Bourcart* | 23 | 46 |
| Trial period (Morse class) | *I. Sharkey* | 23 | 45 |
| Unofficial record (A510 set) | *J. Houlder* | 21 | 42 |
| Using the double needle | *B. Guest* | 24 | 43 |
| We had them too (bug fittings) | *G. Brown* | 21 | 43 |
| Welcome News | *J. Davis* | 21 | 40 |
| What of the future? | *R. Kuhlmann* | 21 | 40 |
| What key was it? | *R. Whitaker* | 24 | 47 |
| What was he doing? | *O. Roeckner* | 22 | 47 |
| You can't miss a Spark | *N. Burton* | 21 | 44 |
| **REFLECTIONS FROM UNCLE BAS** | | | |
| Straight out of Radio School | *B. van Es* | 23 | 20 |
| Working my passage | *B. van Es* | 22 | 14 |
| Weather forecasts | *B van Es* | 24 | 40 |
| **REVIEWS, BOOKS** | | | |
| Bunnell's Last Catalog | *T. Smith* | 23 | 22 |
| Keys, Keys, Keys | *Radio Bygones* | 21 | 6 |
| Mac-Key Blue Book | *T. Smith* | 24 | 19 |
| Morse Code, the Essential Language | *T. Smith* | 21 | 7 |
| Railroad Telegrapher's HdBook | *T. Smith* | 22 | 16 |
| **REVIEWS, EQUIPMENT** | | | |
| Three keys from Canterbury | *T. Smith* | 21 | 17 |
| **SCOUTING** | | | |
| Scouting days (ltr) | *T. Jones* | 21 | 42 |
| **SUBMARINE TELEGRAPHY** | | | |
| Thin Red Lines, The | *Cable & Wireless* | 24 | 26 |
| **VISUAL SIGNALS** | | | |
| Visual signalling equipment and procedures | *Various* | 22 | 40 |


**For availability of back issues, please see the latest issue of Morsum Magnificat**



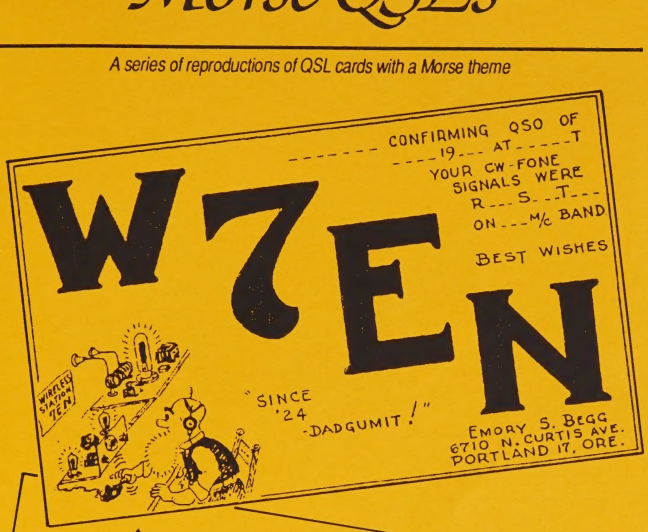

*Thinks... "I'll use CW next time!"*

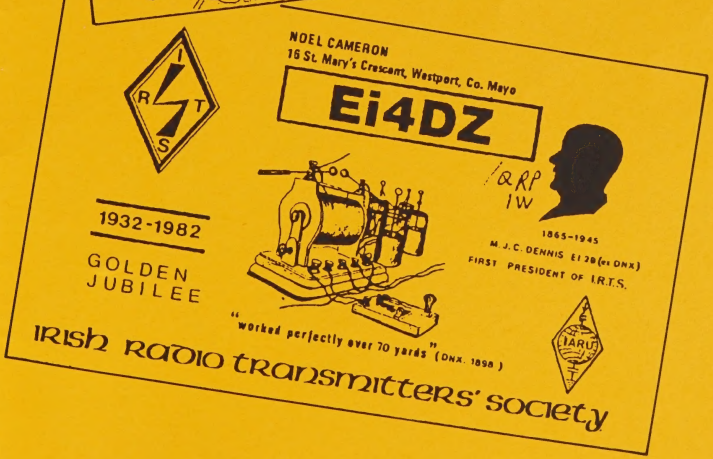
*From Andy Troubachov UA3PIP, Tulah, Russia*

*Best wishes to all MM readers*
*For a very happy Christmas and a prosperous 1993*
*From Geoff G3GSR and Tony G4FAI*

# *Morse QSLs*

*A series of reproductions of QSL cards with a Morse theme*

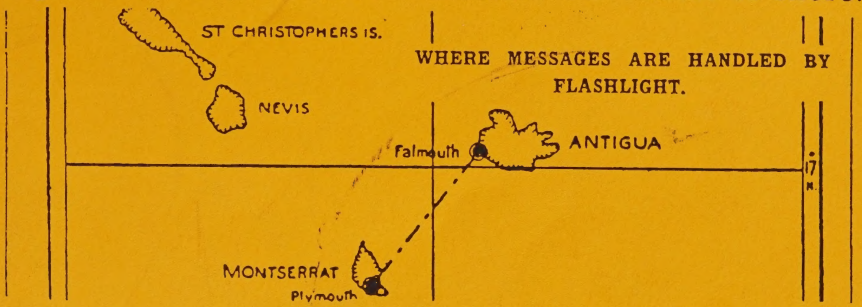


MONTSERRAT, WEST INDIES.

Cablegrams for Montserrat are transmitted by flashlight system from Antigua. The rate is now 51c per word

Montserrat is twenty-six miles distant from the nearest and larger Island of Antigua, and these islands, in the transaction of public business make use of a system of flashlight to signal continental Morse characters from shore to shore.




OPTICAL TELEGRAPHY IN 1924.

PORTHCURNO TELEGRAPH MUSEUM